Only One-Hundred-Twenty-Five Days of Flying Before Spring

THE AIR LINE PILOT

INDUSTRIAL RELATIONS SECTION

NOV 27 1939

Vol. 8—No. 10 | Published by The Air Line Pilots Association, International, 3145 W. 63rd St., Chicago, Ill. | October, 1939

5th Annual Convention of Line Pilots Begins on December 4

ALPA'S CENTRAL COUNCIL. Here's the first picture taken of the Central Executive Council of the Air Line Pilots Association. Their job is to assist the Association officers with unraveling the many knotty problems that arise between annual Conventions. (L. to r.) Standing: LaMar Bowersox, NWA; Lionel Stephan, AA; Phares McFerren, TWA; Lee Williams, AA; M. H. Fay, UAL; Robert Ashley, UAL; and S. R. Richards, UAL. Seated: Usher Rousch, ALPA Secretary; Charles Quinn, C&SAL; John Sandow, UAL; David L. Behncke, ALPA President; Miss Evelyn Previs, Secretary to the President; and W. F. Richmond, NWA.

LATE NEWS IN BRIEF

Transatlantic

Giant transatlantic planes soon may be operating in regular schedule between this country and Italy, Spain, and Portugal—all neutral countries, it was recently announced. Reports from Hyde Park were that President Roosevelt looks with favor on the request of American Export Airlines to establish a nonstop service between these countries and the United States. The Civil Aeronautics Authority is now holding hearings to determine whether or not this company should be issued a Certificate of Convenience and Necessity.

Orders

Recent lifting of the embargo against arms shipments to belligerent nations has released at least $170,000,000 of orders from France and Great Britain for American built planes. These orders are providing a stimulus for American plane manufacturers which are increasing facilities to produce an estimated output of 1,500 planes a month.

LaGuardia

Recently New York's Board of Estimates by a vote of 12 to 1 recommended that the city's new $40,000,000 North Beach airport be named LaGuardia Field. Learning of this move New York's fiery little Mayor commented, "It is very generous of them and very thoughtful; I will think it over." In view of the fact that the Board of Estimates has the right to name New York streets, parks and other public places it would seem that its action in this instance is final

(Continued on Page 6, Col. 1)

N. Beach-Newark Co-Terminals

Finding that the vast New York - Northeastern New Jersey metropolitan district already requires more than one airport to serve its scheduled air transport needs, the Civil Aeronautics Authority today designated the Newark airport and the North Beach airport as co-terminals for that district. The Authority was careful to emphasize that such designation of two airports does not indicate in any way that the air lines concerned are thereby relieved from continuing adequate service to the City of Newark.

CAA Bases Action on Evidence Submitted by AA, TWA, and UAL—Newark and New York Were Interveners

Today's action was based on findings by the Authority after study of evidence submitted in September by American Airlines, TWA, United Air Lines, and Eastern Air Lines, and by the cities of Newark and New York taking part as interveners. American Airlines had sought to include the city of New York as an additional point to be served on two of its routes while the other three air lines requested an amendment to their certificates of public convenience and necessity naming New York, N. Y., as a terminal point and changing the designation of Newark, N. J., from that of a terminal point to that of an intermediate point on their various routes. The opinion issued today was signed by Harllee Branch, Vice-Chairman of the Authority and by members Oswald Ryan, Grant Mason, and Edward Warner.

Authority Finds Two Issues Were Involved

In an opinion accompanying the order, the Authority found two issues involved. The first related to the right of the applicants to

(Continued on Page 3, Col. 4)

Aero Drs. Hold Annual Meeting

The eleventh annual meeting of the Aero Medical Association of the United States was held as scheduled on November 3, 4, and 5, at Hollywood, Florida. This meeting of the air doctors was the largest yet held by their organization. The beautiful Hollywood Beach Hotel and the warm hospitality for which the South is noted, provided a fitting background for the Convention.

Nationally Known Aero Doctors Discuss Currently Important Subjects

Many important subjects were discussed, mostly of a scientific nature, by nationally-known flight surgeons, among whom were: Dr. Ralph Greene, Medical Director of Eastern Air Lines; Captain Harry G. Armstrong, Medical Corps, U. S. Army; Dr. Ross A. McFarland, Assistant Professor, The Fatigue Laboratory, Harvard University; Dr. Ashton Graybiel, Research Associate, The Fatigue Laboratory, Harvard University; Dr. Eric Liljencrantz, Flight Surgeon, Pan American Airways, and Assistant Professor, Stanford University School of Medicine; and Colonel A. D. Tuttle, M. D., Medical Director of United Air Lines.

Forum on Mutual Medical Problems Proved High Light Of Meeting

The high light of the scientific sessions was a forum on the mutual medical problems of the air line pilot, the operator, and the flight surgeon. Participating in these discussions were representatives of Pan-American Airways, Eastern Air Lines, and United Air Lines.

President Behncke Attends Convention and Speaks for Pilots

President Behncke of the Air Line Pilots Association spoke on the "Air Medical Problems of the

(Continued on Page 4, Col. 1)

Biggest Annual Meeting Foreseen

Attendance at the Fifth Annual Convention of the Air Line Pilots Association will surpass all previous yearly meetings. Credentials have been received from 76 Pilot and Copilot delegates. Chicago will be the convention city and the meeting place is the Congress Hotel. The sessions will begin Monday at 10 a. m. on December 4.

ALPA Membership Covers Widest Area—Delegate Establishes Convention Travel Record, 3,825 Miles

Comparatively speaking, due to the total number of air line pilots, the membership of other American Federation of Labor affiliates is greater. Nevertheless, the pilots' association enjoys the distinction of spreading its membership over a wider area than any of the A. F. of L.'s other organizations. The association members fly to the four corners of the Western Hemisphere. Many of the delegates to ALPA's conventions travel from far points. This distance record for last year went to Delegate Ernest W. Gray who came all the way from Lima, Peru, which lies 3,825 miles to the south.

Since the last convention the regular transatlantic air mail and passenger service has been inaugurated. Line pilots fly over the domestic network, over east and west oceans and, in addition, across the seas that lie to the south, separating our country from our friendly neighbors, the Pan-American and South American nations.

Engineering and Airworthiness Problems Focus Attention

Many important subjects will be discussed having to do with all phases of the line piloting profession. Much attention will be focused on engineering and airworthiness problems. Pensions and insurance will also receive marked attention.

Important Representatives of Federal Government to Speak

Representatives of the Authority, National Mediation Board, and

(Continued on Page 4, Col. 1)

F. D. R. Initiates Blind Landing Device Study

In response to a recent request from the President of the United States, the National Academy of Science has formed a conference committee to study into the standardization of instrument landing systems for aircraft.

Recently a communication was received from Mr. V. Bush, Chairman of this committee, requesting the cooperation of the line pilots. He said, "In the evaluation of this important matter, the opinions of highly skilled pilots who have had experience with instrument landing systems are of great importance."

A number of companies have been active in developing blind landing devices. The efforts to date have been somewhat scattered and not sufficiently coordinated.

The reported purpose of the President's study is to coordinate and consolidate everything that has been done in the development of blind landing devices into one method with the view of centering development on one system so that effectual results may be quickly attained.

The President is to be commended for his versatility, inasmuch as he seems to overlook nothing that is of importance to the nation and especially the development of aeronautics.

CURRENT RUMOR MATERIALIZES

Some rumors have a habit of coming true and it appears that reports of a merger between T. W. A. and Marquette Airlines were well founded. In any event T. W. A. filed an application with the Civil Aeronautics Authority requesting permission to purchase Marquette Airlines. The application was filed on October 13, 1939, but has not yet been set down for a hearing.

LINE PILOTS OVER THE ATLANTIC. Navigator Gentry (L.); Pilot Fordyce (R.). First came Columbus' crossing in 1492, running time: 1,680 hours. In 1818 the first steam driven bark to conquer the Atlantic—"The Savannah"—made the crossing in the record time of 624 hours. The fastest surface crossing made during modern times was that of the giant liner "Queen Mary," running time: 94 hours. Today, Pan American wingmen navigate their clipper crafts from continent to continent in 27 hours. Tomorrow's running time: the limitlessness of the air spaces is the only barrier.

THE AIR LINE PILOT

Vol. 8—No. 10 — 289 — October, 1939

Published monthly by the Air Line Pilots Association, International
Affiliated with A. F. of L.

Annual Subscription $2.50

David L. Behncke ..... President
Usher E. Rousch ..... Secretary
Harold L. Knoop ..... Treasurer
Walter G. Hughen ..... First Vice President

Vice Presidents, Foreign

F. I. Jacobs ..... Brownsville
S. E. Robbins ..... Alaska
E. W. Gray ..... Lima, Peru
W. S. Doxey ..... Miami
R. H. McGlohn ..... Alameda

Vice Presidents, Domestic

J. H. Roe ..... Kansas City
E. R. Brown ..... Atlanta
Arthur Mills ..... Dallas
Ralph Johnson ..... Oakland
A. C. Ball ..... Portland
H. H. Montague ..... Salt Lake City
E. L. Remelin ..... Los Angeles
Robert Chew ..... Miami
Edward G. Hamilton ..... Legislative Representative

Entered as Second Class Matter March 11, 1933, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879.

Editorial Offices:
3145 W. 63rd St., Chicago, Ill. Telephone Hemlock 5015

David L. Behncke ..... Editor *Glen Phares ..... Asst. Editor*

"Public safety calls for pilots of high character and great skill. The occupation is a hazardous one. Therefore, the law should provide for a method to fix maximum flying hours, minimum pay and a system for retirement or annuity benefits."
—President Roosevelt.

LOAD-SPEED-DISTANCE

In airplane construction, the problem of the pay or useful load weight factor and its relation to total gross weight is as old as Orville Wright's immortal flight at Kittyhawk.

When one pauses to consider how very closely, vitally, and delicately are geared together, one with another, all the weight factors that go to make flight possible, then and only then is the problem of the aeronautical engineer fully appreciated. These problems are not man-made but it has been left for man to solve them by determining correct weight distribution combinations to give the greatest possible performance with a factor of safety that is sufficiently marginal to insure against structural failure in flight.

The proper allocation of weight factors in aircraft construction is an eternal struggle that has been going on since the inception of flight and will go on as long as aircraft are built. Figuratively speaking, this problem is a delicately-balanced scale. On one side we have "Load, Speed, Distance," on all three of which the Industry must depend for its existence; on the other side of the scale rest the factors of safety on which depends absolutely everything, including the confidence of the public in air travel, without which the Industry cannot hope to succeed. The Civil Aeronautics Authority and the Air Safety Board are the balancers of the scale. More could be said, but surely none can argue that theirs is not a vitally important task.

Recently, we have heard much about changing engineering and airworthiness regulations. The Association has repeatedly warned against the letting down of regulatory bars through the creation of new regulations or changing of the old.

The line pilots who fly the equipment are unalterably of the opinion that when a regulation having to do with airworthiness or engineering is changed or a new one is written, extreme care should be exercised to guard against vagueness and resultant possible abuses, lack of definiteness, and above all, too much leeway on the drafting board, which may result in aircraft being built and placed in service that do not have the proper safety factors as embodied both in construction and maneuverability.

A rather startling statement was heard recently, emanating from an important representative group in the Industry, asking for changes in Civil Air Regulations,—"We hope that any such decision will be favorably consistent with the necessary minimum degree of safety."

The foregoing would have been an excellent statement had the word "MINIMUM" been deleted. Possibly this is a relatively unimportant observation but it is usually the little straws that indicate which way the wind is blowing. Obviously, the desire for improved performance should be satisfied by fundamental technical developments rather than by "changing or writing new rules" in such a way as to enable improvements of performance through the sacrifice of safety. Encroachment on safety for the improvement of performance would seem to point out unmistakably that the game is not worth the candle unless it is worth sacrificing safety to pay for performance. This is undeniably contrary to every rule of common sense and is certainly a distinct contradiction to the policy so successfully followed during the last year in which America's air lines have regained the confidence of the American public.

—David L. Behncke.

"PULL FOR TEXARKANA OR PULL OUT"

By DAVID B. KUHN
Council No. 3, TWA
Kansas City, Mo.

Since there is nothing to do for the nonce I'll take time out and write a newsletter. Since there is nothing to say, I should end it now, but then I would be setting a precedent. That is a bad procedure, it seems, as some of the copilots have been complaining of the precedent set for their wages by early contract negotiations.

Hoping for Immunity From Air Traffic Riddles

Some of us down this way are at present enjoying two weeks' active duty with the Army. We are lucky to be taking this duty along with two CAA men. That should make us immune to any infraction of air traffic rules, at least we hope to have some of them deciphered by end of camp. Our earnest hope is that none of us gets cited.

Pensions to Be Discussed At ALPA Convention

We are all happy that the ALPA convention is at hand. Much can be accomplished by the combined efforts of the members' representatives. One thing that we are all expecting is a discussion of a pension plan. Most of the boys have been agitating the question and now is the time for action. No one can gain-say the fact that a pension for air line pilots would so stimulate the industry that National Defense would be assured. Young men of the type and number needed would seek and follow aviation. The cost of such a pension would be negligible compared to maintaining a huge armed force, but afford the same safety with a well trained reserve force (taxpayers note.) Some of us could afford a new pair of shoes, also. As it is, any extra money goes for sickness and accident insurance. That chasm of outlay is never filled.

About Frontogenesis and Homogeneous Mass

Just received notice of the forthcoming school for us boys this winter. We are to study our manual, operations circulars and a course in meteorology. These studies are most stimulating as well as educational. Our lessons last year were especially helpful in answering queries of persistent passengers concerning the weather. We just explain, "this is the action of frontogenesis, consequently an occlusion is intensifying in what should be a homogeneous mass." If that doesn't stop them the "rain makers" have many more twenty-five cent words one may borrow. Such talk makes the nervous feel content even though he doesn't understand. The pilot must have a grip on such things.

We Are All Very Proud Of Our Alma Mater

We are all very proud of our Association and are content in knowing much good has been accomplished with more to come. There are always some elements in any successful organization which seek to retard its action. Down in Arkansas, the place of my birth, there are signs on the buses which read, "PULL FOR TEXARKANA OR PULL OUT."

NOTICE TO MEMBERS

Services of a Notary Public available at ALPA Headquarters.

My! How That Guy Gets About

By CHARLES H. JETER
Council No. 19, AA
Fort Worth, Texas

Since the first of the month we have some new Captains that will be giving American passengers the service that our older captains have made famous. Our sincere congratulations and good wishes to Francis, Christner, Allison, and Mitchell. We all wish them the "bestest of the best."

While L. R. Williams is not high enough on the seniority list to rate mail pay, still his new promotion rates three stars. After three years on the gravy train (A. M. 30) he now joins the physical wrecks on A. M. 23. You will love it, Fess. You had better—no one else does.

Scribe Jeter Confesses—Gets Run He Didn't Bid For—Constantly on Call—Innumerable Turn Arounds —No Rest Periods

While the personnel at Ft. Worth has not increased since the last issue, the sons and daughters have. Fitzgerald is a new papa already, and the Walkers, Mitchells and Currys—E. P. and O. K. both, will soon be keeping hours of 10-2-6. While we are about it, your scribe will confess, too.

Alas, Alas, the Keyhole Spies Fail To Produce Dirt on Stotts

This is one time that Genie-Weenie Stotts does not rate the paper. Our keyhole peekers did not have a thing on him. Maybe Stotts is slipping, we thought, and if we hadn't visited a certain apartment out in Glendale, we would not have noticed a certain picture that was autographed "With love to D——," signed "Gene." Boy! from the rock-bound coast of Maine to the sunny shores of California! How that guy gets around!

The latest on "Cinch" Walker, the stethescope artist, is his gambling spirit. 140 a minute will cause a collapse of the Ft. Worth National Bank—if it's a boy. If it's a girl, Haire and Sanford will transfer their accounts over to J. H. W.

The Menace from Venice Catches a Fish

Jim Hay, "the Menace from Venice," caught a fish. He spent most of his poker money on equipment and worked long and hard. But shucks, folks, 'twere worth it. Him has a method that is new and unique. I have seen water baited with chum, alfalfa hay, and green willows, and, of course, Ray Fortner has tried other methods, but none of that old-fashioned stuff for Ray. He uses shrimp and cayenne pepper. It works—Jim caught one.

Homer Brings De-Icers To California

Tom Ridley has become a dog fancier. We understand that he has a very good dog bred to the last year's grand champion. He promised several of us the opportunity of shooting behind his young dogs when he gets them trained. We were sort of looking forward to it, having never seen a real good looking dog. O. K. Lawing goes us one better. He can't wait that

(Continued on Page 4, Col. 3)

"To fly West, my friend, is a flight we all must take for a final check."

In Constant Memoriam

Active

Accidental
Adams, John B.—U. A. L.
Anderson, Lloyd—U. A. L.
Andert, Paul A.—U. A. L.
Barron, John M., Jr.—A. A.
Bickford, L. A.—Panagra
Bigelow, Ed.—U. A. L.
Blom, Edwin W.—U. A. L.
Bogen, W. L.—W. A. E.
Bohnet, Frederick L.—T. W. A.
Bolton, Harvey F.—T. W. A.
Bontrager, C. M.—R. A. L.
Borchers, Adrian—P. A. A.
Bowen, J. E.—T. W. A.
Bowen, Lewis L.—B. A.
Brandon, James L.—U. A. L.
Briggs, Francis W.—A. A.
Broughton, D. E.—U. A. L.
Brunk, Paul S.—P. A. A.
Bucher, Charles L.—P. A. A.
Chamberlain, Cassius B.—N. W.
Cohn, Hanley G.—W. A. S.
Cope, Alonzo—Marine Airways
Cox, Floyd—Ludington
Davis, Alfred W.—U. A. L.
Davis, Douglas—E. A. L.
DeCesare, Frank—Panagra
De Cesaro, Joseph G.—U. A. L.
Dietz, Stuart G.—E. A. L.
Dixon, Andrew, Jr.—D. A. L.
Dunn, Stephen—Panagra
Fields, Glenn T.—A. A.
Fuller, Ray E.—A. A.
George, Hal—T. W. A.
Grover, R. Boyd—U. A. L.
Haid, Arthur A.—N. W.
Hale, S. H.—E. A. L.
Hallgren, W. A.—A. A.
Hill, George W.—A. A.
Holbrook, Clyde M.—A. A.
Holsenbeck, W. M.—P. A. A.
Jamieson, W. L.—E. A. L.
Jones, Lloyd E.—U. A. L.
Kelsey, Harold J.—A. A.
Kincanon, Ted N.—A. A.
King, George B.—P. A. A.
Komdat, Albert C.—E. A. L.
Lewis, Harry C.—T. W. A.
Livermore, Joe—N. W.
Lucas, Al—W. A. S.
Lucas, Verne—Ludington
Lynn, John B.—C. & S. A. L.
McMickle, Harold—Panagra
Malick, Forrest E.—U. A. L.
Mamer, Nick B.—N. W.
Marshall, Gerald V.—A. A.
Merrifield, Austin S.—U. A. L.
Montee, Ralph—T. W. A.
Montijo, John G.—V. A. T.
Morgan, Howard R.—T. W. A.
Mossman, Russell C.—C.&S.A.L.
Neff, Harold—U. A. L.
Noe, Earl J.—T. W. A.
Norby, Raymond B.—N. W.
Odell, M. T.—A. A.
Owens, Clifford P.—W. A. E.
Paschal, A.—P. A. A.
Person, Addison G.—P. A. A.
Potter, Norman W.—U. A. L.
Pursley, C. H.—Panagra
Radoll, R. W.—U. A. L.
Riggs, Russell S.—A. A.
Robbins, Wm. J. B.—A. A.
Rose, John A.—K. L. M.
Rousch, Chas. W.—N. W.
Rust, F. H.—A. A.
Salisburg, Hervey M.—T. W. A.
Sandblom, J. V.—C. P.
Sauceda, J. M.—P. A. A.
Sharpnack, J. W.—U. A. L.
Sheets, Don W.—Panagra
Sherwood, George C.—W. A. E.
Supple, Robert E.—Panagra
Tarrant, Harold R.—U. A. L.
Terletzky, Leo—P. A. A.
Thompson, A. R.—U. A. L.
Underwood, Sanford L.—A. A.
Vance, Claire K.—U. A. L.
Waldron, Joe—A. A.
Walker, M. A.—P. A. A.
Wallace, Clyde W.—T. W. A.
Weatherdon, Edwin—A. A.
West, F. W.—N. W.
Wieselmayer, Otto—P. A. A.
Williamson, P. B.—E. A. L.
Worthen, John A.—W. W.
Zeier, Carl F.—C. & S. A. L.

Natural
Blomgren, Lloyd I.—A. A.
Cochrane, Robert M.—U. A. L.
Fife, John A.—C. A.
Hohag, R. J.—N. W.
McConaughey, Ira M.—A. A.
Phelps, Henry T.—P. A. A.
Swanson, Axel—A. A.

Inactive
Anderline, Frank W.
Barr, Julius
Burford, Dean W.
Caldwell, G. Q.
Drayton, Chas. M.
Hulsman, Herbert W.
Noyes, Dewey L.
Ormsbee, F.
Riddle, Glenn L.
Shelton, Boyd M.
Stark, Howard C.
Veblen, E. H.
Walbridge, Donald C.
Wheaton, Harold H.
Whittemore, Fred W.
Wolf, John F.
Willey, Sidney L.

Waiting List
Brock, Wm. S.
Kiser, Daniel

Unemployed
Darby, James E.
Downs, Lloyd
Hays, George L.
Keadle, Floyd E.
Rhiner, L. H.

Honorary
Rogers, Will

The "Gripes" of Wrath

By A. W. STAINBACK
Council No. 34, UAL
Oakland, Cal.

The new title for this column was the bright idea of C. T. Robertson, in case any of you want to know. When he first popped out with it, back in Chicago, I was inclined to resent the implication—still am, for that matter — but Papa Dave and his man, "Friday" (on the payroll, "M. A. Glazebrook"), got such a kick out of the similarity that I thought I'd try it out on the customers. I don't get it, but with me, too, the customer always comes first.

Papa Dave Gets a New Name: "Simon" Behncke

Speaking of names, Papa Dave has a new one. Those of you who have sat in on conferences over which he cracked the whip will know why the U. A. L. Contract Conferees will hereafter call him "Simon Legree." The man is so accustomed to working twenty-four hours a day himself that he thinks the rest of us should do it too, and like it, which is his mistake. We do it when he makes us do it, but we don't like it.

Present Day Compasses, Like Women, Unable to Make Up Their Minds

How are the compasses on your airplanes? If they're the same as ours (and I happen to know that they are) they're terrible. The compass is the only piece of equipment used in modern aircraft that has gone without essential improvement since the first airplane flew, and as the basic instrument of all our navigation, it's the most vital. We are required to learn complicated radio procedures that require split-degree accuracy in flying. We must know to the degree the bearing of each of the four legs of all the ranges within the fuel range of our airplanes, and that's a lot of legs. We are subjected to courses in navigation and the graphical solution of navigation problems that warn, "an error of even one or two degrees in laying out or flying this problem will introduce errors so large as to destroy its usefulness." But to date nobody has brought out a compass that can be read to a dependable accuracy of one degree, or two, or even five. If they have, it's a deep, dark military secret not available to the air lines. Present compasses are not even calibrated closer than five degrees. The ones we use are positively feminine in their characteristic inability to make up their minds.

Compasses Bounce Around Like Mama in a Bargain Basement On Dollar Day

Start out with one of Mr. Douglas' bright new plumbing shops, say from Reno to Elko, on a clear windless night. Set your nose on Needle Peak beacon. The map says the course is forty-eight degrees, but, depending on its mood the compass may indicate anything from forty to sixty degrees. In its most common mood it will indicate *everything* from forty to sixty degrees, if you watch it long enough. Watch it like a hawk for sixty seconds, it stands perfectly still on fifty-one degrees. That's all right the correction card gives minus three degrees for that heading anyway; but take your eyes off it for a minute to check your gas or the stewardess' oil, or whatever, then take another look. The gyro reads the same but the compass has decided to show its forty-five for a while, and does so without a quiver for another minute or so. By the time you get to Needle Peak you're not sure the ship hasn't turned around to fly backwards. Of course, if it's a little rough the danged thing bounces around from heading to heading like Mama in a bargain basement on Dollar Day. Then you get around by progressing in the general direction of the radio ranges, and to heck with what the com-

(Continued on Page 6, Col. 1)

We Fly Across the Millpond

Pilot J. B. MAGENIS, Pan American Airways

Council No. 36, P. A. A., is hereby and hereunder brought to your attention. We are at present—and for the next few days anyway—

Giant Boeing Clipper plane moored at Lisbon, Portugal, during one of its crossings. In a fast moving world, yesterday a transatlantic air crossing was considered an extraordinary event; today, merely routine.

nineteen strong (but not silent). Perhaps you've met some of the gentlemen. Here's a "Who's Who" of the gang:

Captains G. B. Blackmore, A. D. Durst, R. Ford, A. E. LaPorte, C. A. Lorber and W. A. Winston; Copilots W. B. Biggers, P. M. Borg, H. Brock, R. M. Elzey, S. Flower, J. N. Gentry, B. S. Harrell, A. E. Kalkowsky, J. M. McLeod, J. B. Magenis, J. D. O'Neal, E. C. Perry, and C. H. Smith.

Northern Route Is From Port Washington to Foynes, Ireland

Smiling Skipper Winston on a sight seeing tour in Marseille, France, between tricks on the bridge of his 20th century windjammer.

For the benefit of those who only read The AIR LINE PILOT and the funny pictures, we are engaged in flying across the millpond which separates us from those bad boys in Europe. We have been going by two routes. The northern route is from Port Washington to Shediac (swell lobsters here) to Botwood (the hunter's paradise they say) and then to Foynes (the last trip of the winter just returned).

Southern Route Is From Port Washington to Lisbon, Portugal

The present schedule calls for two trips per week over the southern route which is Port Washington to Bermuda, where all would like to stop overnight, but instead we spend the night bouncing through the Mid-Atlantic fronts to Horta—a close inspection of the map will show it just across the channel from Mt. Pico, 8,000 feet, in the Azores—arriving just after dawn we gas up and after dodging a few CuNb arrive in Lisbon late that afternoon.

We Chase the Sun Around and Only Get Lapped Once

After losing all our expense money in Lisbon watching a little

Mechanicians Anderson and Comish tuning one of the mammoth power plants (1500-hp) of the Boeing 314. Mechanical perfection is paramount to long distance over-water flying. PAA mechanics tune the motors of these planes, when moored in route, perched on catwalks high above the water.

ball bounce around a wheel and listening to the croupier yell something in Portugese, we chase the sun around and only get lapped once. Baltimore is then a welcome sight to all, especially the navigator who is partially recuperating from standing the Horta-Bermuda watch of fourteen to sixteen hours.

Captain Gray Develops Averaging Octant

Of future interest to the domestic lines—when, as, and if they forget that the ground is under them for ten to twelve hours—is the averaging octant developed by our Chief Pilot, Captain Gray. It is now being given the works and from all accounts it will not only cut down much of the navigator's work, but will give him much more accurate celestial sights. To us it means the difference between guess and the other thing.

Newspapers Steal Glory From Reporter

Unfortunately the newspapers have stolen much of the glory away from your poor reporter and have left him with naught but the births and deaths to work on. The stork has been conspicuous by his absence since his visit to the McLeods, and as for that "old guy with the scythe," we don't even know him.

Even over the Atlantic, passengers insist on their bedtime stories. "—And the big size bear, the middle size bear, and the small size bear lived happily ever after."

Co-Terminals—

(Continued from Page 1)

engage in air transportation to and from New York, N. Y., in addition to Newark, N. J. The second involved permission to utilize a particular landing area in rendering service to the city of New York, N. Y., in the event that the applications were granted.

In discussing the first issue, the Authority's opinion points out that Congress had directed it to give primary consideration to the encouragement and development of an air transportation system properly adapted to the needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defense. In this proceeding, therefore, the Authority felt that it must consider the national interest as paramount, giving full consideration, however, to the interests represented by the Cities of New York and Newark in their relation to, and as a part of, the national public interest. In arriving at its decisions, the Authority consequently placed the greatest emphasis upon the distribution of population and of economic and commercial interest in almost complete disregard of any considerations of political boundaries.

North Beach Serves 10,910,424 People Spread Over an Area of 2,514 Square Miles

Reciting testimony introduced at the hearings, the opinion points out that the New York-Northeastern New Jersey metropolitan district (as the Greater New York Area is described in the 1930 census) has a total population of 10,901,424 spread over an area of 2,514 square miles. While it found that the present terminal at Newark, New Jersey, was in a position to render convenient service to the portion of this district lying west of the Hudson and to the lower regions of Manhattan Island, the Authority found that the eastern half of the district was without such convenient service.

Hoover's Fact Finding Committee's Findings Cited

Referring to other evidence introduced at the hearings, the Authority's opinion points out that a survey carried out as early as November 29, 1927 by a special "Fact Finding Committee on Suitable Airport Facilities for the Metropolitan District," appointed by Herbert Hoover, then Secretary of Commerce, had recommended establishment of a number of airports to serve various parts of the district and had specifically pointed out the "immediate necessity for an airport east of the Hudson river located in the Queens-Flushing Bay area" as well as an airport in the Newark Bay area. Air traffic congestion at Newark especially during bad weather was also given serious consideration, as was testimony by various air line representatives that the potential business in the New York-Northeastern New Jersey metropolitan district would in the future require the use of at least two airports. Considering all these factors, the Authority found that "the use of two airports for regularly scheduled air transportation service to and from the Metropolitan District, located so as to be readily accessible to the centers of population on each side of the Hudson River, is necessary at the present time, and that such use will encourage and assist the development of an air transportation system properly adapted to the future needs of the foreign and domestic commerce of the United States, the postal service, and the national defense."

Serves New York's Metropolitan Area and Connects Long Island and Territory to the North by Express Highways

Discussing the use of the North Beach airport by the petitioning air lines the Authority found it to be located in the center of the metropolitan area east of the Hudson river and connected by express highways to the territory to the north, and to the rest of Long Island. It further found that the Boroughs of the Bronx and Queens, with respect to which North Beach airport is the most accessible, have a combined population of 2,907,059 and that the major part of this area is more than one hour removed from the

(Continued on Page 4, Col. 4)

100-Pound Tuna Catch Wins Crown For Mel Kassing

By T. R. COCKCROFT
Council No. 2, TWA
Newark, N. J.

Again I take my poison pen in hand to see what I can stab with it, although I probably would have better luck with fish hooks. Mel Kassing went out and landed a tuna, hundred-pounder, and the crown of Best Fisherman at Newark. Cholly Kratovil fished longer and harder than anyone and boldly accuses Kassing of sticking his hook in the fish when Mr. Tuna yawned from the boredom of angling for Cholly. Jim Eischeid was so busy chasing striped bass that he got so far from home he couldn't make the brawl (meeting to you) that was held to weigh Hereford against the Work Agreement. There are so many angles to the case they had to compromise. Hereford stays in Newark and Newark stays where it is.

Stage Tea Party for Tommy Tomlinson and Wife

D. W. Tomlinson was East awhile back and at the tea party for him and his wife it was revealed that no one can compete with Tommy when it comes to stowing away roasted corn on the cob. There was a mob of people and pooches there and as no outing is complete without a dog-fight the pups obliged and Roger Kruse lost—he got a gnawed paw out of it. Your scribe forgot the heaviest portion of his physique is halfway from the ground, so spun in and sprained an ankle while playing ball.

Pitt Panthers Collect Seatbelts, Pillows, Etc., as Trophies

Of course one can't always win as is evidenced by the terrible trimming Jack Zim and Pat Gallup are reported to have taken at poker—from a couple of girls too. Then on the charter trip to Seattle the ship lost seatbelts, pillows, etc., to the trophy collecting Pitt Panthers. As one of the fighting cats put it, "We were gonna get the wheels too, but every time we got off them, the pilot hid them!"

About a Guy Named Hal What Bought a Piano

Here's the lowdown on Professor Hal Blackburn, the guy what bought a piano! Hal got the thing home, then proceeded to take the works out of it so he could play it. Seems it was one swell music box but the pedals kept kicking Hal whenever he smacked a sour note. Now he has it under control and after some warming up will unbend and go strictly gut-bucket with you. Anyone wanting the works out of a player piano can make a deal.

It Can Easily Mean You're Jug-Headed When You Get Back To NK

They are changing the schedules around again, this time to enable the crews of Flight 21 to get back legally from CG if they have an instrument approach or two to make. That flight has a good number, it can easily mean two to one you're jug-headed when you get back to NK. A longer layover will be OK.

That is about all for this time but for this little gem for little gentlemen—it may help you to get to sleep.

"Boogie Man"

Just keep that little "on course"
In your earphones all the while;
You're flying "on the gauges,"
And you'll always have a smile.
Don't get 'way out in the quadrant,
'Cause you may not know how far—
And the CAA will get you,
If you don't know where you are!

CONVENTION—

(Continued from Page 1)

Air Safety Board are expected to speak on mutual problems.

Growth of the Air Line Pilots Association since its last annual meeting November 15-19, 1938, has given rise to many new problems all of which must be solved and decided upon at the coming convention.

Air Safety Given Preferential Position on Convention Calendar

Methods of increasing air safety will again be given a preferential position of importance on the convention calendar. The Association fathered and brought into being the Air Safety Board by first originating the idea and then sponsoring the legislation that made it possible. Its monumental achievements during its short but active life need no embellishment to prove its indispensable worth to the welfare of commercial aviation, now, and in the future.

Association's Contract Program To Be Scrutinized

The Association's program of making contracts under the provisions of the Railway Labor Act will be diligently gone into both for the purpose of reviewing the progress that has been made and planning for the future.

The coming convention on December 4 promises to be interesting, constructive and rich in accomplishments.

Aero Doctors—

(Continued from Page 1)

Air Line Pilot" and pointed out that the line pilots were pleased with the present constructive trends of air medicine. He said, "I am not a doctor but I believe that I am correct in assuming that it doesn't take outstanding skill to examine a pilot according to a well defined predetermined procedure —common sense dictates that it is an outstanding medical feat to reclaim a man physically after a physical impairment has been discovered." He went on to point out that the medical profession had branched out and was no longer limited to merely examining pilots but that its efforts were directed for the most part to keeping pilots flying as long as possible. In his closing remarks, Mr. Behncke stated, "If the Air Medical profession continues to season its activities with a goodly sprinkle of common sense in addition to medical knowledge, it has a bright and constructive future ahead."

Dr. Herbert B. Wright Elected New Aero Medical Association President

Dr. Herbert B. Wright, Cleveland, Ohio, was elected the Association's new president to serve for one year, replacing Dr. J. C. Cole of New Orleans, La. Dr. Herbert F. Fenwick, Chicago, Ill., was installed as President-elect, according to the Aero Medical Association's by-laws and will assume office as President one year hence at their next annual convention in 1940.

Sheepherder Ends Search for Body of Howard Stark

A body found by a sheepherder in the Wasatch Mountains of Utah September 20 has been identified as Howard Stark, air inspector for the former Bureau of Commerce, thus ending a three-year search for the air navigation expert who disappeared in a snowstorm January 16, 1936.

Stark's remains were identified by United States Marshal Gilbert Mecham of Huntsville, Utah, when he found a wallet near the body which contained his pilot's license. Stark's home was at Alexandria, Va.

The air inspector's misfortune came while making an official flight from Rock Springs, Wyoming, to Salt Lake City. The plane cracked up in the Wasatch Mountains and apparently Stark had attempted to wade through heavy snow drifts to some sign of civilization but became exhausted. Cold and exhaustion were cited as cause of his death.

Lazy Hummingbird Migrates

—Courtesy Washington Times-Herald.

PILOT H. J. REID, PCA, HANDS OVER "JENNIE."

Pilot Geo. Diggs, EAL (r) accepts tiny passenger

Friendly fliers take tiny hummingbird for aerial jaunt to warm land of nectar. "Jennie's" winning way cuts reams and reams of Federal red tape with heretofore undreamed of dispatch - - melts official ice of Washington Bureau heads and clearance papers are issued.

By GEORGE WATERS

A tiny hummingbird named Jennie, born with a flair for luxuy and allergic to exercise, rode into Washington Airport yesterday aboard a Pennsylvania-Central transport plane.

Jennie, taking advantage of a lady's prerogative, couldn't make up her mind to migrate South with her own circle, and was found shivering and huddled at Detroit Airport.

Delayed for Month

Pilots H. J. "Doc" Reid and Les Musgrave, who never let a fellow flier down, took Jennie under their wings.

They found an empty orchid box, filled it with grass, and started off on the first lap of Jennie's trip via plane to Brazil, a place, ornithologists say, Jennie should have been a month ago.

Entangled in Red Tape

Jennie, snug in her box, hummed to herself and thought of all the delicious nectar awaiting her among the late spring flowers of South America.

But Jennie's reverie was interrupted briefly when she arrived in Washington, where the Government has that roll of red tape in which even a mere bird may become entangled.

Jennie's case was taken to the austere confines of the Bureau of Biological Survey, Department of Interior.

It seems there's a law or a treaty or something about shipping migratory birds without permits.

Jennie Thaws Ice

Air line officials had a serious pow-wow with W. R. Williams, in charge of the bureau's permit division.

Williams took one look at Jennie and his official ice melted. He decided that since this was a rescue job and that Jennie ought to be in Brazil, anyway, he would issue "clearance papers."

So last night on a Pan-American transport Jennie took off for Brazil, to a land of sunshine and honey aplenty, where all good hummingbirds should be.

Getting About—

(Continued from Page 2)

long. Charley Pedley says Lawing has a better dog at the Hollywood Plaza than Tom will ever have anyway. Good shooting this winter, Oscar.

While we are on the subject of California, your scribe would like very much to use this means of asking the person or persons that are wearing his suit out there, to please leave the coat and pants in the same room. It's embarrassing to be running around the corridors with your pants on and no coat, or vice-versa.

Stormy Mangham taught us a new game. Snooker pool. We agreed to play the game even though we had never played it before, if Stormy would go bowl a couple of games with us—Stormy hadn't bowled before. So after we beat Stormy four straight games of snooker we went bowling, and after Stormy beat us two straight games on the alleys we went home. What liars pilots can be sometimes! Rus Arden told us we could play golf about even. He said he shot around 90. That was about our speed so a nickel a hole didn't seem too much. We shot a very good 80. We still owed Arden for six holes when we finished. 90—phooey!

Veterans' Aid to Beginners Cements Friendship and Esteem

We have several new copilots at Ft. Worth who have not passed their probationary period yet and are not eligible for ALPA membership. They will be soon. As our meetings are not secret, and as we hope they will soon be members, we have issued them a blanket invitation to attend our meetings. At the same time, Mr. Editor, would it be amiss to send them a copy of the Air Line Pilot? They are interested in the news of their respective chapters. If their names and addresses are not on file, send us a few extra copies and we will distribute them. That is, of course, if it's OK.

Imagine our surprise to see in the Hollywood Gazette screaming headlines to the effect that Homer Rader brings De-Icers to California. What did they mean, Homer?

Come One, Come All! See the Great Vance Wash Diapers

If you ever want to see some very clever pictures, get our boss, Paul Vance, to invite you over. A sixty-minute show of Paul's new baby and a vacation trip that Paul took Fran on are well worth the money. After seeing the great Vance wash diapers and seeing Fran catch Tarpon, from now on when we call Paul to go fishing, we are first going to say, "May we speak to Mrs. Vance, please?"

Famous fighting words: You can't kill my dog.

Our orchid of the month we divide and give to three men we have heard so much about from the men who have just gone to work for the company—Miller, Arden and Sanford. While it has long been the practice for all American Airline pilots, and particularly those based at Ft. Worth, to help new men, the pilots we have mentioned seem to go out of their way, so to speak, to help the youngsters out. The many hours they have spent, the chance that they might personally be the losers, in their untiring efforts to train and teach new men all they know, surely cannot be in vain if they could hear the new men praise them to each other. The satisfaction they must have in seeing the new boys take over, fully capable because of their work and help, must be a fine thing, indeed. We know that many others join us when we say all this. (paid adv.)

Pens and Dedicates Metrical Expression to New Captains— Not Bad Charles

After that bunch of slush, we go even farther when we print the following verse called The New Captains' Lament, or The Problem of Mitchel, the Midget.

'Tis fear of loss enriches gain.
The goodness here is born in pain.
Too many schedules added east,
Will change for us our place to feast.
The pay now is good, but still we know
Soon or late to Newark we'll go.
Then conserve your dough and brave the blows,
Which fate on new, not old, bestows.
If our residence here was not uncertain,
There would be no pride in being Captain.
Could we all here, build a house,
Our work would get like, you know, a louse.
For after all, 'tis worry and strife
And change of home, that gives zest to life.

Co-Terminals—

(Continued from Page 3)

Newark airport by ordinary means of ground transportation.

North Beach, 10 to 15 Minutes Closer to Grand Central Station Than Newark

As to the relative convenience of the Newark and North Beach airports to the Grand Central Station and 42d Street area of Manhattan the Authority found the evidence somewhat conflicting. It found that 50 minutes is the present scheduled time allowed by the air carriers for the bus run to the Newark airport, the checking of tickets, and loading of baggage. Corresponding time allowance proposed for similar operations in connection with North Beach was placed in the evidence by one witness at thirty-five minutes. Taking all the evidence together the Authority found that the North Beach airport is from ten to fifteen minutes closer to the 42nd Street area by ordinary means of ground transportation. In connection with this fact the record of testimony showed that a substantial percentage of passengers traveling into the Newark airport at the present time are bound for the Grand Central area or to some point north thereof. The Authority found from an examination of train schedules incorporated into the record that excellent train service is available in the vicinity of both airports, Newark having the advantage for travel going south, whereas North Beach is more convenient for those going to New England and points in New York State. Both airports were found to afford good connections for travel to the midwest and west although Newark offers greater variety of connecting lines and more frequent schedules. A factor found in favor of the use of North Beach was its possession of seaplane base facilities which may be used for the transatlantic service according to testimony appearing in the record, thus offering an ideal connecting point between such services and the domestic air lines.

The Early Bird Gets—No Sleep

By F. J. SCHWAEMMLE
Council No. 44, Delta
Atlanta, Ga.

If this newsletter is lacking in news please forgive me as I am just about to recuperate from a train ride and a trip on the combination bone crusher and dawn patrol. Getting up in the morning at 4:45 a. m. wasn't early enough, it seems. The schedule has been moved up to 12:30 a. m. so we can spend the night in the smoky city of Birmingham. You see our business has been so very, very good that we have added another schedule between Atlanta and Birmingham. This pleases several of the boys very much as it made a Captain out of Pre Ball. With every promotion of a Captain we get two new First Officers. Honestly, the woods are full of them. Before every trip there is more than the customary amount of formal introductions.

Ex-Puffers (Dusters to You) Can't Stand the Altitude

Some of the new members are ex-puffers (dusters to you) and the first time I had one up to 5000 feet he had to have oxygen above 500 feet. They're nice to have along if you are inclined to do some plain and fancy hedge-hopping but gosh, you can't have any fun anymore, with ATC and so many passengers.

Skid Norton Takes a Postman's Holiday

Vacations were in order for awhile but there is business to be done so most of them have been postponed. However, Skid Norton managed to get his in by flying to Havana, New York, Chicago and Atlanta. Some fun! A typical postman's holiday.

Attended Flying Cadet Reunion, Returned by Train—Imagine That!

I managed to sneak a few days off to attend a reunion of the Flying Cadet Classes 1922-23-24 at the Newark Athletic Club and, needless to say, a good time was enjoyed by all. Of all things I went up and back via TRAIN! Imagine that!

Every day the following remark is heard, "Well, I eat for six more months." That man (the check pilot) is here again! Isn't it wonderful what these airplanes will do?

No Marriages or Births, Not Even Anticipations—Remarkable!

Don't know of any more marriages, births, infanticipating or the like. I guess there have been a few birthday anniversaries but we get like the women on that score who believe the ten best years are between 28 and 32.

Most of the senior officers have been going around and around and the following have safely emerged from the mill: Pre Ball, Fred Ball, Holliman and Ingram. These are in the final stages of being finished products.

Dolson Takes Long Range Radio Shots—Makes Remarkable Discovery He's Flying over the United States

Floyd Addison is batching it at present. His family is down Texas way. George Shealy is sporting a new set of uppers (no, not the Pullman kind). Charley Dolson tried to get the dispatcher and himself lost by taking some very long range bearing shots on these fine, clear, perfect radio reception nights. The results were at least in the U. S. A. Tip Schier acquired several new handles on his name. His mail box has the following inscription: "The terrible-tempered Mr. Bang" and "The Great Stone Face." Addison sports a Camera Eye. Fred Ball, better known as Iron-Hammered Ball.

One of the boys is very much disgusted with Snow Balls and I don't blame him. As the monkey said when he sat down on a cake of ice, "My tale is told."

SAFETY IN FLIGHT AND ITS RELATION TO CONTROL AND MANEUVERABILITY

By MELVIN N. GOUGH, Senior Airplane Test Pilot
National Advisory Committee for Aeronautics
(Second and Concluding Installment.)

As regards piloting errors, it would seem that the first accident which occurred to a new type airplane might be found to have occurred due to a so-called error in judgment on the part of the pilot and improper operation of the airplane. But when the second or third accident occurs, this common failing of the human being can no longer be charged with the accident. It becomes a designer's error. One of the first questions asked in an investigation of accidents in subways, railroads, or steam vessels, is: "What happened to the safety devices?", or: "What safety devices could be applied to keep a repetition from occurring?" The application of a similar thought to aviation is the intention of the C. A. A. in their quest for built-in safety. The important point is how can accidents be prevented and not who is at fault.

LATERAL CONTROL AND STABILITY

One of the most important factors governing safety is good control. It is reasonable to expect that an airplane shall be easy and simple to control under all conditions of flight. Control and stability, major factors affecting maneuverability, are closely related. They are no more easily separated in discussion than in flight. An aileron control system which was perfectly normal when used on a wing with no dihedral angle, actually produced first, no roll and then a reversal in the direction of the roll due to accompanying adverse aileron yaw when the dihedral was increased in the interest of stability. Owing to large variations in acceptable stability, it is hardly to be expected that any one best combination of stability and control will be found. Pilots will, in general, take all the control they can get. Is it not possible that in many respects they can, and do, get too much?

CONTROLS JUDGED BY OPERATING FORCE AND RESPONSE PRODUCED

Controls are judged by the force required to operate them and the response produced. Individual controls which are light, free of friction, have small inertia, require an increased force application with deflection and forward speed, and, in addition, produce, with no lag or delay, a response that varies smoothly and linearly with displacement, have been found to be both pleasant to operate and desirable. Such controls instill confidence. There is a certain logic in their operation. Friction and irreversibility are responsible for the lack of self-centering and thus, in effect, reduce stability. There should also be a certain uniformity in the relative variation of the effort required on the part of the pilot to operate the various controls. For instance, controls of the conventional type require about the same apparent effort for their operation if the forces to operate them in normal flight are approximately in the ratio of 1:3:10 for the ailerons, elevator, and rudder, respectively.

CITES NEED FOR AILERONS WITH GREATER RESPONSE TO ROLL WITHOUT YAW

Powerful lateral control is desirable for maneuverability. There is an increasingly apparent need for ailerons with greater response in roll than any that now exist, accompanied by no yaw. It is inherent in present types of ailerons that response decreases with decrease in speed. There never seems to be sufficient control at low speed and high angles while there is almost always a complete loss of control beyond maximum lift. Even if the controls were vastly improved, however, experience has shown them unsatisfactory to cope with the situation if violent instability in roll exists.

Reduction in lateral control at high speed due to limited deflection caused by cable stretch has also been found objectionable.

DEMANDS ON RUDDER PRODUCE CONTROL THAT IS DANGEROUS

The necessity to aid lateral control with violent skidding through the use of the rudder is to be lamented and is considered dangerous. The demands on the rudder caused by the conventional landing gear and the stalling and spinning possibilities, coupled with its partial blanketing by wings, fuselage, and flaps, produce a control which is excessive and dangerous in normal flight. Slipping and skidding can be the source of great trouble. Well-rounded fuselages with small vertical tail or fin effect have been found to make easily possible the complete stalling of the vertical tail and the reversal of rudder forces. The dangers of such a situation can be further appreciated when it is realized that changes in yaw are usually accompanied by large changes in pitch.

REQUIREMENTS FOR RUDDER CONTROL SHOULD BE REDUCED

One must not lose sight of the fact that to be sold to the masses flying must be inherently safe. Detrimental control should not be placed at their disposal. Acrobatics can be eliminated as unnecessary. Slipping and skidding to any but a very slight degree are unnecessary for normal flying and maneuvering. The large normal lifting force acting on a wing, if inclined laterally, has a component well ample to produce the turning that is necessary for normal flying. The requirements for rudder control can and should be reduced to that of a trimming tab correcting for torque variations due to power and speed changes. Supply all the control necessary, but no more! For obvious reasons, the use of the tricycle landing gear and elimination of the stall, and improved stability in flight, will do much to assist the accomplishment of such a simplification.

MULTIENGINE AIRPLANE TAKES ON DIFFERENT ASPECT

In the case of a multiengine airplane, the rudder takes on a somewhat different aspect because of the necessity to overcome unsymmetrically applied thrust. The magnitude of the control required to overcome aileron yaw is a minor factor. It is true that directional trimming for various conditions of power and forward speed is required, but the demands for this effect are small. In the case of the multiengine airplane, with regard to the possibility of engine failure, it is generally agreed that sufficient rudder must exist within the capacities of the pilot to apply it to compensate for the unsymmetrical thrust which remains. It is believed, however, that more consideration should be given to the design of the fin and directional stability independent of the rudder control so that the demands on the rudder are decreased when such a condition occurs. Thus can the possibilities of violent resulting motions be reduced.

DESIGN SUGGESTED WOULD DECREASE DYNAMIC MOTIONS

Present designs seem to be based on the requirement that the pilot make a control deflection immediately an engine fails with little consideration as to what happens should he fail to do so. It can easily be seen that such human failing can occur under the strain of conditions such as a take-off at night in bad weather, with the added disadvantages of retracting landing gear, adjusting power, and interpreting other instruments. The design suggested would lead to a decrease in the rate and magnitude of the dynamic motions resulting from engine failure causing a violent change in heading and nosing downward due to the skid, which seems to be the cause of many accidents. It is exacting too much of the pilot and too little of the designer to expect continued alertness on the part of the pilot to avoid disaster in the case of engine failure in multiengine airplanes. There is no reason to believe that an airplane could not be designed in which, when an engine fails, the airplane would yaw slightly and slowly, and continue generally on its way without further disturbance, even though slightly offset laterally and possessing a slight skid.

Under ideal flight conditions of smooth air and good visibility, the requirement for lateral control and stability are small. The same can be said for a bicycle. But did anyone ever try riding one on a rough surface and without space reference? Lack of attention allows the immediate build-up of a vicious cycle leading to disaster.

RIGHT-SIDE UP STABILITY IN FLIGHT MUST BE INHERENT STABILITY IN FORM OF AUTOMATIC PILOT NOT CHEAP OR SAFE

It does not seem unreasonable to expect that in the case of an airplane the design be so arranged that the wings would not only tend to, but of their own accord would, remain level. Of course, all designs incorporate some dihedral effect or correct roll due to yaw, and all have some degree of directional stability. But the proper combination of these qualities in such a way that, with absolutely no attention on the part of the operator, the airplane will always wander along on a nearly straight or series of straight flight paths and always right-side up is rarely encountered. Spiral stability does not exist, not that it couldn't—simply that it is not required. It seems necessary in the interests of safety. This does not mean that suppressed fin area with relatively excessive dihedral has not been observed to be unfavorable. It does mean that both extremes are undesirable and the happy mean should be sought. Whether the vertical tail area required to meet this condition would conflict with the thoughts heretofore given on the rudder is uncertain at present. However, it should be possible to so simplify the airplane that the attention of the pilot is merely required to supply geographic directive sense.

The presence of violent lateral instability at low speeds in most all types is associated with and discussed in connection with the stall.

Stability in the form of an automatic pilot is not cheap or safe. It is an extra expense, desirable, but subjected to the same requirements as is the human pilot. Too much is at stake in the event of its failure. It could be made a much more reliable safety device if the duty required of it were reduced by improved airplane design.

LONGITUDINAL CONTROL AND STABILITY

Elevator controls occupy a position somewhat similar to that of the rudder in that they, too are usually more powerful than desired. Extreme changes in center of gravity, power, and flap-trim requirements cause large variations in the location of the elevator angle range needed for the specific conditions. Thus, an excess is available in each and the total range is large. Again, there is evidence of small trim changes leading to safety.

The elevators necessary for maneuvering are determined by their ability to produce the design normal load factors. In this respect, the inertia of the entire system plays an important part. Except under extreme conditions, no difficulty has been experienced in making pull-ups to prove the design load V-G diagram.

TRICYCLE LANDING GEAR REDUCES ELEVATOR REQUIREMENTS

The use of the tricycle landing gear reduces to a minimum the landing requirements made of the elevator to get the tail down. Such a condition frequently is met. The minimum speed attainable in the air is not always possible near the ground.

From the standpoint of the pilot, as well as the passenger, it is desirable that an airplane should fly and continue to fly, of its own accord, in the attitude and at the speed for which it was originally trimmed. Any deviations that cause a departure from the original condition of equilibrium should be caused only by conscious effort on the part of the pilot, and greater conscious effort should be required as the stall is approached.

MORE DEMANDS MUST BE MADE FOR IMPROVEMENT IN STABILITY

Longitudinal stability has been found to be suppressed to the limit. Thus again is the elevator control accentuated. The desirable qualities of stability, as exemplified by good biplanes, are conspicuous by their absence in most modern low-wing monoplanes. Static stability, as determined by measurement of control force and elevator position required for trim at speeds throughout the flight range, is small and marginal. Approach to neutral, or actual instability frequently exists at low speeds in some power, loading, or flap condition. Realizing that the requirements of control and stability generally conflict and that conditions which lead to greater stability also lead to greater control stiffness and less maneuverability, it is apparent that in present designs a great increase in longitudinal stability is desirable and necessary. This is particularly true for each of the conditions of power-on and controls free at low speeds and high angles of attack. In the interests of safety, and with due regard to pilot's strength in the case of large airplanes, more demands must be made for improvement in stability. Again the automatic pilot should not be considered as a cheap form of stability. The compromises necessary in the case of the large transport airplane with its variable load are appreciated. Less excuse can be made for the smaller airplanes.

DESIRABLE THAT OSCILLATION BE DAMPED OUT

It is well-known and required that some form of dynamic longitudinal stability is desirable. This stability has to do with the nature of the oscillations resulting from a disturbance. Other than that the oscillation be damped out, little is known concerning the desirable degree of subsidence. All degrees up to oscillations which do not increase in magnitude are daily met. Long-period oscillations, having a period of from 30 to 40 seconds, seem to be of small consequence. As a matter of safety, it is desirable that they damp out eventually, but under human guidance they can, with little difficulty, not be permitted to exist sufficiently to disturb passengers.

Short-period oscillations or hunting, having a period of 1 second or so, if not normally and rapidly damped, become very annoying. It is considered unsafe at speeds near the stall because of the angle-of-attack variation with which it is associated. It is particularly disturbing to the pilot at cruising speeds if its frequency gets in phase with that of the horizontal tail control, as was experienced quite recently.

Stall

All types of airplanes lose their rolling stability more or less sharply at some angle of attack. The presence of this unstable condition near maximum lift with its resulting altitude loss and altitude change, in addition to effectively increasing landing speeds, constitutes one of the greatest dangers attached to stalling existing airplanes. The basic solution of the stalling problem consists of the elimination of rolling instability. Lacking this feature, warning of its loss is required, as was mentioned under discussion of longitudinal stability and control. It is realized that the large center of gravity and power changes on the "must" list of the design for transport service place a long way into the future the possibilities of completely suppressing stalling in large airplanes. These conditions do not appear as limitations on the smaller types where stalling could and should be prevented. If it must be tolerated, however, it is not unreasonable to expect that the resulting roll not be violent and that the attitude, speed, or angle of attack at which it will occur be definitely defined and heralded well in advance. Much has been learned about the stall and its control, but the subject has by no means been exhausted. It is generally recognized and borne out by tests that small taper in the plan form of the wing and wing-tip slots have a marked effect on improving the stall. Performance compromises however, have suppressed their general use. There can be no doubt that much more time and thought need be given to improving stalling characteristics. Control through the stall range, without stability, has appeared most unsatisfactory. Stability here requires but little accompanying control!

Every effort has been made to discover the useful value of stalling and spinning. None has been found. Why should the attainment of such a useless and dangerous condition be placed at the disposal of the operator?

TAKE-OFF AND LANDING

In take-off and landing, good control should, if ever, exist. As previously mentioned, improved stability in the design should be expected to bear a greater portion of the responsibility in this all-important and inevitable but uncertain condition of ground contact. The certainty is the essence of safety.

Good landing characteristics demand that the airplane not be too clean or free of drag in the approach condition. Similarly, the application of flaps to a high degree can be unsafe because of the delicacy of the flare required for landing, and confusion resulting from the large trim changes generally associated with flap and power application. The actual landing must not require too delicate nor too skillful an operation of controls. In this respect, and particularly for the private operator, the freedom allowed the operator by the tricycle landing gear again makes it particularly attractive. The hazard which exists in the event that an immediate take-off after landing is necessary cannot be overemphasized. The quick-operating flap incorporating both high and low drag possibilities with no variation in lift has been found to simplify judgment and improve glide-path control. It is felt, however, that flaps should be incorporated in the safe airplane with great caution. They are now generally used to allow an increase in wing loading, a most important factor in both take-off and landing safety, as well as ability to maneuver.

Before closing, there is one other point to which attention should be called. All that has been said thus far pertains to airplanes. But there are other types of aircraft available. In seeking safety in flight for the private owner and relatively unskilled operator, the advantages of rotating-wing aircraft become increasingly apparent and should not be overlooked. The possible attainment of parachute-like stability, good control at extremely low forward speeds, steep angles of climb and descent, and freedom from stalling with its present disadvantages certainly seems worthy of sacrifice in performance.

CONCLUSION

In concluding, it is not to be expected that any single invention will make all flying safe. But, since the regulation and education demanded of the operator or pilot vary inversely with the inherent safety in design, every effort must be put forth to improve basically the airplane itself by the incorporation of known and proved desirable characteristics. Safety in flight can only be achieved through the patient and persistent application of the results of fundamental research directed toward simplifying the duties of the operator.

Tests made to date on existing airplanes indicate that many reasonably desirable characteristics are not unattainable; their present absence is due for the most part to performance compromises. Safety in flight can be greatly improved.

26,144 Pilots; 11,160 Aircraft

According to a recent C. A. A. announcement there are now 26,144 pilots and 11,160 aircraft certificated in the U. S. This was an increase of more than 6,000 pilots and of more than 1,400 aircraft since July 1, 1938, when the totals were 20,076 pilots and 9,732 aircraft. Further, it was an increase of more than 3,100 pilots and 1,100 aircraft in the six-month period since January 1, 1939, when there were 22,983 certificated pilots and 10,000 certificated aircraft. In the private classification alone, during the last six months, there has been an increase of 971 pilots of which number 228 were college students who received their certificates after training under the experimental phase of the CAA vocational flight training program inaugurated in 13 schools during the second semester of the 1938-39 school year.

The total number of aircraft, certified and uncertified of which the CAA had record on July 1, 1939, was 12,210, while this figure on the corresponding day of last year was 11,031. Uncertificated aircraft (bearing identification numbers only) declined during the year from 1,299 to 1,050.

In addition, there were 109 certificated glider pilots and 209 gliders, of which 33 were certificated. These were below the totals as of July 1, 1938, when there were 159 certificated glider pilots and 230 gliders, of which 44 held Federal certificates.

The 26,144 pilots were rated as follows: 1,161 air line transport; 6,679 commercial; 930 limited commercial; 11,647 private; and 5,727 solo. Of the total number of active certificates, 66.4 per cent were in the non-commercial grades, that is, private or solo. The certificated pilots included 755 women, classified as follows: commercial, 73; limited commercial, 26; private, 433; and solo, 223. The certificated glider pilots included 3 women.

ALCOHOL AND THE AIRMAN

Ninth installment of the article, "Alcohol and the Airman," written by Dr. Ross A. McFarland, and abstracted by Dr. Ralph Greene. Succeeding installments will appear in following issues.

VARIOUS STAGES OF INTOXICATION ANALYZED

Alcohol in blood — Subjective States and Observable Changes in Behavior Under Conditions of Heavy Social Drinking.

Mg. per cc.—(A milligram is 1/65 grain. A cubic centimeter is 16 drops, approximately).

.10 Clearing of the head. Freer breathing through nasal passages. Mild tingling of the mucous membrane of the mouth and throat.

.20 Slight fullness and mild throbbing at back of head. Touch of dizziness. Sense of warmth and general physical well-being. Small bodily aches and fatigue relieved. **Not fretful about the weather** nor worried concerning personal appearance. Quite willing to talk with associates. Feeling tone of pleasantness.

.30 Mild euphoria or feeling of well-being, "everything is all right," "very glad I came," "we will always be friends," "sure I will loan you some money," "it isn't time to go home yet." No sense of worry. Feeling of playing a very superior game. Time passes quickly.

.40 Lots of energy for the things he wants to do. Talks much and rather loudly. Hands tremble slightly, reaching and other movements a bit clumsy; laughs loudly at minor jokes; unembarrassed by mishaps, "you don't think I'm drunk do you, why I haven't taken anything yet." Makes glib or flippant remarks. Memories appear rich and vivid.

.50 Sitting on top of the world, "a free human being," normal inhibitions practically cut off, takes personal and social liberties of all sorts as impulse prompts. Is long-winded and enlarges on his past exploits. "Can lick anybody in the country," but has observable difficulty in lighting a match. Marked blunting of self-criticism.

.70 Feelings of remoteness. Odd sensations on rubbing the hands together, or on touching the face. Rapid strong pulse and breathing. Amused at his own clumsiness or rather at what he takes to be the perversity of things about him. Asks others to do things for him. Upsets chair on rising.

1.00 Staggers very perceptibly. Talks to himself. Has difficulty in finding and putting on his overcoat. Fumbles along with the keys in unlocking and starting his car. Feels drowsy, sings loudly, complains that others don't keep on their side of the road.

2.00 Needs help to walk or to undress. Easily angered. Shouts, groans, and weeps by turns. Is nauseated and has poor control of urination. Cannot recall with whom he spent the evening.

3.00 In a stuporous condition, very heavy breathing, sleeping and vomiting by turns. No comprehension of language. Strikes wildly at the person who tries to aid him.

(Continued on Page 7, Col. 3)

LATE NEWS

(Continued from Page 1)

and that the Mayor has nothing more to say about it—to which all the air line pilots would like to add, Amen! Why not? Certainly, no one is more deserving.

Air Base

The Federal Bureau of Yards and Docks has announced that contracts for the construction of an air base at San Juan, Puerto Rico, have been let. This air base will be located in the harbor of the naval air station which is the major link in the Caribbean defense chain. The cost of this project will be $8,300,000.

'Plastics'

The use of plastics for the construction of aircraft has long been the subject of much experimentation. It was recently learned that a west coast company is building a modernized version of the Howard Hughes pursuit racer almost entirely of plastic materials. Many of the details of the plastic process are being withheld but it was indicated that the labor and material costs of this type of construction will slash the manufacturing expenses of aircraft to a fractional figure.

Expansion

Board of directors of Pan American Airways has approved a long range five-year plan of expansion which calls for the purchase of 22 new planes and extending its present service to Alaska, South America, New Zealand, and Australia.

Two important foreign extensions of the air lines of the United States are being requested of the CAA: American Export Airlines has applied for certificates to operate nonstop service between New York and France via two separate routes, using new Vought Sikorsky four-engined flying boats, making the run in 27 hours. PAA has requested authorization to operate between Los Angeles, Cal., and Mexico City, Mex., using substratosphere pressure cabin Boeing 307 equipment, completing the trip in less than 12 hours.

Studying

Three federal agencies — the coast guard, the weather bureau, and the CAA — are studying the transatlantic air travel problems caused by the conflict abroad. Developing complete weather information and obtaining swift ships for rescue work are the major problems under deliberation.

Stainback—

(Continued from Page 3)

pass says. That is, if you're smart. But it plays hob with any ideas you might have about smoothness, accuracy, and precision.

It was a smart boy that developed the directional gyro. We couldn't get along without it. But now that it's finished and working pretty well, I do wish that he'd get busy and fix us up a reference compass to set the gyro to.

"Hi" Little to Photograph Wild Weather Sequences

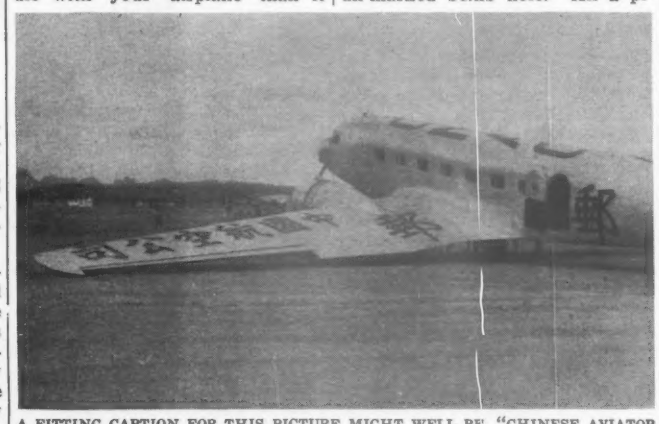
The local Chamber of Commerce will probably be displeased with me for admitting it, but what with one thing and another—it being practically in the back yard and all—I didn't get nearer the San Francisco Fair than the CAA would permit the navigation of a DC-3. I did get to the Eastern version, though, on a day early in October. According to Mr. Whalen, Vice-President-in-Charge-of-Figures, there were 336,321 other people there that same day, one of whom was Captain Hiram Little.

(Continued on Page 8, Col. 3)

GET SOME ROPE, AND LOTS OF COOLIES—NO HAVE ROPE, NO CAN GET COOLIES, NO CAN, NO CAN GET!

PILOT ROYAL LEONARD, ALPA MEMBER AND FORMERLY EMPLOYED BY TWA BETWEEN LOS ANGELES AND ALBUQUERQUE, HAS BEEN FLYING IN CHINA SINCE EARLY JUNE, 1936. HIS EXPERIENCES HAVE BEEN MANY AND VARIED, AMPLY SPRINKLED WITH THRILLS AND ADVENTURES. HIS FLIGHTS HAVE CARRIED HIM FAR INTO THE VAST INTERIOR OF THIS GREAT AND MYSTERIOUS COUNTRY, THE HOME OF ANCIENT CIVILIZATION. FIRST HE WAS THE PERSONAL PILOT OF GENERAL CHIANG-KAI-SHEK AND NOW HE IS FLYING FOR A CHINESE AIR LINE, BASED AT HONG KONG, CHINA. IN SPITE OF HIS LONG ABSENCE FROM THE STATES, HE HAS MAINTAINED HIS ACTIVE MEMBERSHIP IN THE ALPA. IN ADDITION TO HIS INTERESTING LETTERS, HE OCCASIONALLY PENS A STORY FOR THE AIR LINE PILOT REFLECTING HIS EXPERIENCES AS AN EYE-WITNESS TO THE RAVISHES OF WAR WROTH UPON A PEACE-LOVING PEOPLE—THE CHINESE. IN THE FOLLOWING STORY, HE VIVIDLY DESCRIBES THE EXPERIENCE OF GETTING STUCK IN A CHINESE MUD HOLE. IT SEEMS THAT CHINESE AIRPORTS ARE POT MARKED WITH JAPANESE BOMB CRATERS WHICH ARE LOOSELY FILLED WITH DIRT, BECOMING SOFT EACH TIME IT RAINS. WHEN A PLANE MIRES DOWN DURING LANDING OR TAKE-OFF THERE IS THE ADDITIONAL IRONY OF POSSIBLY BEING MADE A TARGET AND BEING SPATTERED BY THE BOMBS OF NIPPONESE AIRFIGHTERS. ABOVE IS PICTURED PILOT LEONARD AND TWO OF GEN. SHEK'S SOLDIERS, ACTING AS BODYGUARDS.

Sometimes it takes more headaches to get out of a Chinese puddle with your airplane than it takes to solve a complicated Chinese puzzle. Since the Japanese have demonstrated their readiness to shoot down all transport airplanes, whether or not the pilots are Americans, we are doing our flying to and from Hongkong at night.



A FITTING CAPTION FOR THIS PICTURE MIGHT WELL BE, "CHINESE AVIATOR LEFT WING LOW MAKES LANDING."

WHO WAS IT THAT WAS DOING ALL THE COMPLAINING ABOUT AMERICAN AIRPORTS? TAKE A LOOK AT THIS SCHEDULE-DISRUPTING INCIDENT.

Japanese Bomb Craters Not Conducive to Airport Safety

One of our midway stopping points between Chungking and Hong Kong is Kweilin. The airport has very little merit during rainy weather. And days here without heavy rains are far and few between. Refilled bomb holes are numerous and provide a question mark to every take-off and landing because they are not filled properly and are always soft. The surface is soapy when wet so it is impossible to zigzag even a little. The ground crews are always lax in placing marker flags by which we can line up our take-off or landing and roll between them. During the interval of a take-off or landing when the wheels are rolling on the ground, it is impossible to change course to miss an un-marked bomb hole. All a pilot can do is keep his fingers crossed and hope for the best as he rolls over the field.

Wheels Sink to Hubs in Take-Off Attempt in 6 Inches of Water

One morning just after daybreak I tried to takeoff when there were more than six inches of water on the field and a heavy downpour reduced the cockpit visibility to almost zero. Just as the wheels were getting light they rolled into a puddle of water so deep that it brought the plane almost to a stop. Since the field was small there was nothing else to do but pull the throttles back. The moment we stopped, the wheels were down to their hubs in the mud.

Coolies' Laziness More Acute Than Rheumatism

"Get some rope and lots of coolies," I said to our agent. But being stuck in the mud was my worry and not his, so his actions seemed to say. To a person as lazy as he was, physical effort was more painful than it would be had he been suffering from acute rheumatism.

"No have rope, no can get coolies," he told me.

"Well, go and find out where can get!" I ordered.

"No can, no can get," was his only answer.

Good-Natured Soldiers Willing But Their Beef Was No Match for 18,000 Pounds of Mired Airplane

In a few minutes a large number of curious good-natured soldiers gathered around. Prevailing upon their good nature we asked them to pull us out which they were quite eager to do. However, 18,000 pounds deep in the mud require lots of man power to move and without rope by which they could pull, there were not enough places where they could push effectively.

No Have Rope—Bombed Shack Filled With Rope—That ‡%X@"&% Agent

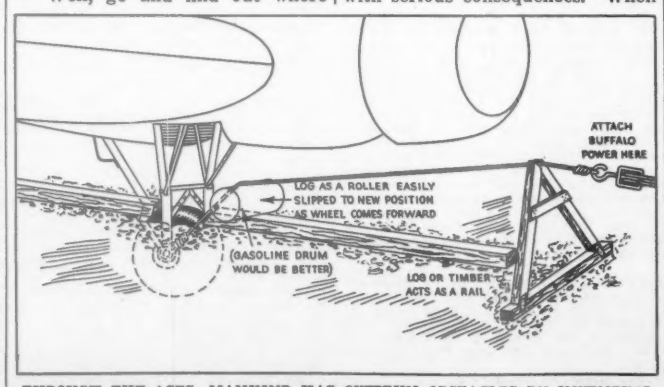
If I expected to get out of this hole it would be necessary to have some rope and it wouldn't do any harm to walk across the field and look into those military shacks and shambles remaining after repeated bombings. The first house I stuck my head into was filled with rope, new at that and in all sizes. My first inclination was to march our agent across the field by his ear, pulling it smartly each step. If it had not been for the deep water making my walking difficult, that is just what I would have done. As it was, by the time I did return to the plane, discretion had replaced my impetuosity. However, I hope what I said pained his ears as much as if I had pulled them.

Well, That's a Horse of a Different Shade—Even the Chinese Air Mail Must Go Through

When I revealed my discovery to the agent he replied:

"Oh, no! We couldn't use the rope because we are keeping it for the Generalissimo's Douglas just in case it might be stuck in the mud here."

"Well, in that case you had better get that rope out pretty quick," I retorted. Then I explained that we had the important Chinese Air Mail on board and if I reported them as being the cause of its delay they would be faced with serious consequences. When they learned this they were more than glad to give me the use of all the rope if I needed it.


ATTACH BUFFALO POWER HERE
LOG AS A ROLLER EASILY SLIPPED TO NEW POSITION AS WHEEL COMES FORWARD
(GASOLINE DRUM WOULD BE BETTER)
LOG OR TIMBER ACTS AS A RAIL

THROUGH THE AGES, MANKIND HAS OVERRUN OBSTACLES BY INVENTING INGENIOUS METHODS AND DEVICES. HERE IS AN INVENTION OF PILOT LEONARD'S THAT WAS USED SUCCESSFULLY TO HOIST AN 18,000-POUND AIRPLANE OUT OF A JAPANESE BOMB CRATER.

New Name for Dizzy 3—"Big Plow With Wings"

When we brought the necessary rope to the plane we found the men had disappeared.

"Well," I said to the agent, "guess you had better get some buffaloes." Several times in the United States I had been pulled out of a mudhole by horses and since the buffaloes are to the Chinese farmers what the horses are to the American farmers I saw no reason why we could not use them now.

"No can get," was his answer.

"What do you mean, no can get?" I asked and at the same time pointing to many farmers in the distance who were plowing their paddy fields with their water buffaloes.

"Go, hire all the farmers you can get and when they find out we will pay them well we shall have more than we need," I said. It was no use, however, I might just as well have talked to the plane and accomplished more than to try to get him to expend a little energy. At length the military party came to my aid.

"Buffalo you want?" they queried.

"Yes."

"How many do you want?"

I asked for twelve although I figured six would have been enough because one big buffalo is considered to be equal to two horses in pulling power. Pretty soon I saw them on their way. In the meantime, the agent tried to convince me that it was no use and how I was going to hitch them to the plane appeared to him as a big problem.

"The same as they hitch them to the plows," I explained, "this airport is a big paddy field and that plane is all same one big plow. Instead of each pulling one small plow they will all pull together on this big plow. The way that plane is down in the mud, it is a big plow with wings on it."

"Tsou! La!" I Yelled—Nothing Happened—Coolies Not Versed With Old Adage "Pull Together"

After the first attempt I began to think the agent was right. Their flimsy harness broke with only a small pull. However, I improvised some harness with our rope which they could not break. Now, the fun began. In spite of all my explanations to the drivers, each had his own idea.

"Tsou! La!" I yelled.

Instead of all the drivers beating on their beasts in unison so they would pull together, only one at a time would make his buffalo pull while the others stood by and

(Continued on Page 7, Col. 1)

Start Training 11,000 Student Pilots

Following the approval by the last session of congress of the C. A. A.-sponsored Civilian Pilot Training Act it was announced that actual training of pilots would commence this fall. In the interim the C.A.A. has selected over 400 colleges which are participating in the program. Only those students enrolled in selected colleges are eligible for application.

The Training Act authorizes an expenditure of $4,000,000 which it is estimated will provide for the training of 11,000 pilots. The plan contemplates that courses in aviation, including ground school as well as flying, will be put in by a number of approved colleges, such courses to be conducted according to regulations prescribed by the C.A.A. The cost to the student will not be more than $40.00 exclusive of insurance, it being mandatory that each student maintain appropriate insurance.

Equal Opportunities

Among interesting features of the Act is a proviso that none of the benefits of training or programs shall be denied on account of race, creed or color. It is also

(Continued on Page 8, Col. 4)

NO CAN GET—

(Continued from Page 6)

watched. Of course, one animal pulling alone did about as much good as if we tried to plow under the wings. However, one buffalo with his belly close to the ground pawed and made a valiant effort to pull the plane out of the mud. I had a sneaking suspicion that these drivers had a wager among themselves as to whose buffalo could pull the "da fiji" out of the mud.

Clearing Sky Brings Fear of Possible Jap Air Raid on Kweilin

By this time the sky was beginning to clear. Air raid warnings here were so poor we couldn't depend on more than a ten minute notice which is hardly enough to get under way even in the best conditions. The Japs took every advantage of the clear days to continue what they termed blasting Kweilin off the map. At the rate they were going they did just about that. Already one third of the city lay in ruins. This was no time for buffalo contests but they were having so much fun that it required considerable effort on my part to explain to them the necessity of all pulling together. The buffaloes themselves must have considered it a serious contest because during the pause they began eyeing each other up and down with wicked looks.

Around and Around—Bellowing—Bucking—Snorting; Everybody Had Fun but Me

In a twinkling of an eye they were fighting. Each bellowed a challenge at all the others. With horns locked they were going around and around, plunging and snorting while still hitched to my precious airplane. The splash and spray which their flying feet kicked up, to say nothing of the splash of our feet while we were running to a safe distance, made it almost as difficult to watch as it would have been had all this been going on in a cloud of dust. Now a buffalo is a sturdy animal and packs more mass per cubic foot than any other earthly creature. I dare say that when charging at full speed one could run right through an airplane. Suppose they considered butting my airplane an adjunct to butting each other! My apprehensions gave me a sinking feeling inside. The damage of their fight might equal that of a good bombing as far as my airplane was concerned.

Buffalo Vs. Airplane—I Expected the Worst

Now two of them were running right for the plane. "They are going to run right through your airplane," someone shouted. Just a fraction of a second before it became a matter of Buffalo vs. Airplane they made a right angle turn and in another instant they were tangled in their harness and rolled into a heap. Knowing this would make them furious, I expected the worst when they were again squared away, but by some miracle they broke out of their harness. Everyone else must have been as tense as I, because the moment the buffaloes broke away, all the onlookers gave vent to a lusty cheer.

Now that the remaining animals were free they fought harder than ever, continuing to snort, bellow and kick up a terrific cloud of spray as they went around and around. Fortunately, their flight carried them to the far end of the field and not until they were beyond the boundary did I feel secure. At this juncture, someone asked, "Do you want those buffaloes back and try once more?" I don't remember answering him but I do remember looking at him just as I might have looked at one of those fighting buffaloes.

Buffaloes, Coolies Are Failures—Nipponese Air Raid Danger Increasing—Finally 150 Men Do the Trick

Having finished this episode my airplane was still mired deep in the mud, the sky was practically clear, and the danger of the Japanese raids increasing every minute. It was not until we had a hundred and fifty men pulling on the rope were we able to move the plane to a solid portion of the airport.

After this experience I was more careful than ever about avoiding dangerous parts of the airport. When running up my motors, testing them prior to each take-off I was sure that my wheels rested on solid ground. However, a week following the previous experience, just as I released the brake and opened my throttles for a take-off the left wheel felt as though it had collapsed. I followed the natural reaction of any pilot when I cut the motors as quickly as possible. I looked out and could see that the wing tip was touching the ground and it was still sinking. Fortunately, there were a number of soldiers standing nearby who came to my aid quickly by holding the wing until we could dig a hole for the tip and prepare a support which would not damage it. Even so, the wing tip was slightly bent before we could stop it from settling.

English Speaking Passenger Explains Underground Caves

Upon investigation the wheel and landing gear was perfect but the wheel had broken through the surface into a hole that apparently had no bottom. One of my passengers who could speak English explained that this part of China was famous for its underground caves. During the heavy rains the soil underneath the surface is washed away thus leaving a relatively thin crust on top which appears to be solid. Obviously, my wheel had broken through one of these places.

On this occasion I did not rely on man power and certainly would not dare to try the buffaloes again. Thanks to the fact that a new railroad was being built through Kweilin I was able to secure a chain hoist and use it. When this equipment is handy, it requires only a few minutes to get the largest airplane out of a deep hole. Since all of our planes might be badly mired and at the mercy of the Japanese bombs, we now keep this equipment ready for instant use at all of our airports.

If You Don't Believe It Come Over and Try It Sometime

This ends my little story and if there is any doubt in anyone's mind about its authenticity come over and try it sometime. I thought you might enjoy hearing about some of the difficulties we meet as we fly in China.

Airport Zoning Lags in States

According to a report of the National Institute of Municipal Law Officers, as well as a report of the Technical Development Division of the C. A. A., progress in the direction of eliminating airport hazards is not moving very fast. Essentially this is a state problem and state laws apparently are necessary to further accomplishment. At the present time there are only eleven states which have enacted zoning statutes for the protection of airports. Strictly speaking, only nine of these statutes are zoning laws, the other two appearing to be more of the character of condemnation proceedings. According to the opinions of experts both methods are necessary if results are to be satisfactory.

Many Airports Already Obstructed

The zoning method is an exercise of the police power. The state passes a law authorizing cities to establish zoning restrictions in the neighborhood of airports. Such restrictions usually prohibit the erection of structures so as to interfere with the glide path of aircraft approaching at an angle of 20:1. Unfortunately, however, many airports are already obstructed and to impose a zoning ordinance at this late date would impose a heavy burden upon property owners. In such cases it is necessary to compensate the owners for any loss they may suffer as a result of removing buildings and so forth. Condemnation proceedings alone are of no value since no action is taken until the nuisance has come into existence. It therefore seems necessary to have a zoning law as well as the right to condemn property. The one complements the other.

Little Progress on Uniform Statutes

Model uniform statutes have been drafted which if adopted by all the states will provide the relief sought. However, little activity in the direction of adopting these statutes has occurred up to this time. In the meantime, air transportation carries on despite its handicaps.

ALCOHOL AND THE AIRMAN

(Continued from Page 5)

4.00 Deep anesthesia, may be fatal.

In following the concentration of alcohol in the blood, in relation to the effects on behavior, it is necessary to keep in mind the fact that the course of alcohol in the blood and spinal fluid is not the same. The blood curve of alcohol rises and descends more rapidly; the spinal fluid, on the other hand, ascends more slowly and descends much later. Roughly speaking, one can say that the effect of alcohol would appear to persist much longer in the brain and spinal cord than in the blood.

The next step in analyzing the psychological and mental effects of alcohol is to turn from the **quantitative studies** which have related the impairment of sensory, motor and metal functions to the relative amount of alcohol in the blood or urine.

In laboratory studies of the effects of alcohol on behavior, it is necessary to control as many of the variables as possible for the studies to be of any significance and also to follow the concentration of alcohol in the blood or the urine at the time of the testing periods. It is shown, for example, that the concentration in the blood varies with the rate of taking alcohol, the amount of food in the stomach, the body weight of the subject, the extent of the dilution, whether the person is a habitue or a teetotaler, physical fitness, glandular defects such as an abnormal thyroid function giving rise to a very high or a very low metabolism.

Also, adequate control drinks must be given in attempting to disguise the taste, for the imagined effects may often be as great as the real effects in very suggestible persons. In addition the tests must be as far as possible beyond the person's conscious control, as the eye movements in reading, so the subject will not be able to "beat" the test by exerting great effort and temporarily overcoming the action of the alcohol. Finally the test must be a highly practised one so that any improvement present will be due to stimulation and not due to practise. If practise is present the weaker dilutions of alcohol may only be great enough to conceal the improvement due to practise. Thus the experimenter is unable to reveal the actual impairment present. A review of the experimental results shows quite clearly that the more adequately the above factors have been controlled the more the relative amount of initial stimulation has diminished. All experimenters agree that alcohol acts as a **depressant** on sensory, motor and mental functions, varying in extent, of course, with the amount of alcohol ingested and the variables mentioned above. Because of the fact that the scientific literature on the mental effects of alcohol is so extensive only a few of the best controlled and more interesting studies can be reviewed here.

SMOLDERING CHINESE VOLCANO ERUPTS—AND HOW!

A Chinaman taking instructions at an American flying school left his bag at a station in charge of a station agent while he went to take his flying lesson. When he returned, he found that his bag had carelessly disappeared and he was pretty mad about it. He wanted to tell the station agent what he thought of him for his carelessness but due to his somewhat limited knowledge of the English language and being excited his remarks became a bit scrambled. What he said was, "Pretty d - - n seldom 'bout my bag. She no fly. You no more fit to keep station than for Ch - - st sake. That's all I hope."

—Thanks to Dr. L. H. Bauer.

* * *

VISIBILITY CLEAR AND UNLIMITED

Robert Wadlow, Alton giant, greets Thorton Wagner, shortest air line pilot in the country, at Lambert St. Louis Municipal Airport. Captain Wagner of Chicago & Southern, a veteran pilot who has flown a million miles, is just half the size of 19 year old Robert Wadlow, who is nearly nine feet tall and weighs 491 pounds. Bob recently flew to New York to appear on the radio program, "We the People." Before his departure he gave Captain Wagner the "glad hand." After all, Wagner's a pretty fair sized chap—according to the height of the doorway. Wadlow wants to be a pilot. However, there seem to be some obstacles to overcome, as usually is the case in this funny old world of ours. Probably one way would be for Wadlow to train his legs to be retractable so that they would fit the rudder bar. Another would be to have Wadlow ride the plane in the same fashion as one rides a bicycle. Where there are disadvantages, there are always bound to be advantages. For example, when making a blind landing, Wadlow could merely hang one of his legs out of the cockpit window and when it dragged the ground, all he would have to do would be to pull back and land.—Utopia.

* * *

WHAT'S AIR FARE, VERTICALLY SPEAKING

"What is the air fare from Washington to an altitude of 10,000 feet?" was the question put to Tom Lindsey of United Air Lines by a prospective passenger recently at his office in the Shoreham building. The passenger said he would buy the round-trip, with no stopovers—he hoped.

* * *

COUNT ME OUT

I'd rather fly the mail than be a blooming bombardier,
Busy blasting non-combatants from their beds far to the rear.
I may never get a medal I can show my children's kids,
But my sleep will be untroubled—it might not be, if I did.
I already wear a uniform, I snap a mean salute,
But I don't get jitters trying to see ships before they shoot!
There isn't much adventure flying schedules on the line,
But aside from fog and snow and ice, there is some peace of mind.
I'd rather fly the mail than be a wartime bombardier,
Let them keep their war in Europe, we have WORK to do back here.

—Thanks to T. R. Cockcroft.

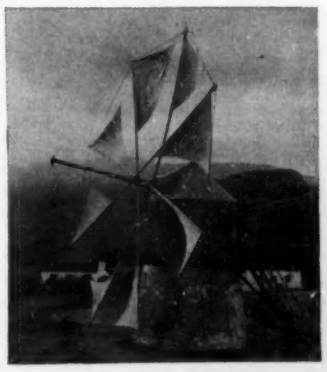
* * *

SEES ALL—HEARS ALL—KNOWS ALL—TELLS SHERIFF

When First Pilot Arthur C. Cheney, WAE Burbank, tires of line flying he need not worry about the passage of California's Ham and Egg law because Sheriff M. E. Ward at Las Vegas, Nevada, will give him a job. The sheriff's philanthropy is not without cause. For many months the law and order in Las Vegas searched for a stolen auto. It remained for Art to espy the car hidden away in the hills. He drew a map showing its location and the sheriff soon made a recovery. As a result Art may wear a deputy's star when he sees fit.

* * *

AH—AT LAST WE HAVE PERPETUAL MOTION!



Attention NACA! What do you think about this propeller? An aeroplane airscrew attacks the air to derive power. This Moorish airscrew just leisurely lays back and lets the air bring power to it. Suggestion: How about installing a line of these along the leading edge and have them geared to operate the main propellers? Alas—alas. At last we have perpetual motion. All interested address inquiries to the 3rd Padded Cell to the right.

* * *

OVERHEARD

A small boy exclaimed excitedly to his mother while watching an air liner making a landing: "Ma, ifen he can't get her tail down he'll crack his paddles sure."

* * *

"LINK" FORMATION FLYING

Pilot Sparboe to Pilot Freeburg of Northwest Airlines: "Do the army boys now simulate instrument flight in link trainers?"

Freeburg: "Do they! Well, now I'll tell you — they not only fly them but they have become so proficient they are flying them in wing kissing formation."

* * *

RIGHT ON THE NOSE

"Therefore taking things all round, and considering all the facts, the situation looks pretty promising. I do not believe there is going to be a war for many, many years in Europe."

—C. G. Grey in the August 30, 1939, issue of THE AEROPLANE.

Branch Discusses Airports

Foreword: Following is an address delivered by Harllee Branch, Vice Chairman of the Civil Aeronautics Authority, at the banquet of the National Association of State Aviation Officials held in New Orleans, October 18, 1939. Literally speaking, Mr. Branch is a man who has the commendable distinction of being promoted from the ranks. He was originally in the newspaper field, has a thorough understanding of labor problems, and served with distinction as Second Assistant Postmaster General from early in 1934 until he was appointed as a member of the Authority on July 7, 1938. He has had much outstanding experience with air mail and air line rate fixing.

HARLLEE BRANCH

The question as to whether the Federal Government is going to spend money on civil aeronautics is, of course, already answered. The Federal Government has been spending money on civil aeronautics since 1918 when it first began, through the Post Office Department, spending money on an experimental air mail system.

Modest and Historic Beginning

From that modest and historic beginning the Federal Government has assumed heavy obligations for the inauguration and maintenance of an adequate domestic and international air mail and air transportation system and for the general development of civil aviation.

Government's 20-Year Outlay for Carrying Air Mail Is $150,000,000

Government support of the air mail system, including domestic and international services, has grown to the point where, even deducting the amounts received from air mail postage revenues, the Government's payments for the carriage of air mail during the past twenty years totals approximately $150,000,000.

The early steps in furnishing a few beacon lights at emergency landing fields for the experimental air mail service have resulted in the present extensive Federal airways system. To safeguard air transportation the airways in this system are equipped with revolving beacon lights, radio ranges which project courses over the route flown, teletype circuits, continuous weather reports, intermediate landing fields, and other air navigation aids. To date the Federal Government has expended for these aids approximately $78,000,000.

Since 1927 the Federal Government has borne the cost of inspecting and certificating all aircraft manufactured in this country and the cost of inspecting, certificating, supervising and regulating all types of civil flying. It is estimated that $11,000,000 have been expended for such services.

$170,000,000 Spent on Airport Projects

During the past five years the Government has spent more than $170,000,000 on airport projects in connection with its relief program. All of these expenditures by the Federal Government are independent of the amounts expended by the Government for military aviation purposes.

At its last regular session the Congress appropriated $4,000,000 for a Civilian Pilot Training Program and more than four hundred colleges and universities throughout the country have been selected to provide the courses of study and training called for by this program.

While this program is an expansion of vocational education and training and in nowise a subsidy, nevertheless it is an expenditure of Federal funds to encourage and develop civil aviation. I might say in passing that it is my opinion that this program will do more to encourage and develop civil aviation than any program yet offered.

20-Year Federal Cost for Civil Aeronautics Aid $400,000,000

The Federal aid for civil aeronautics over the period of the last twenty years has totalled over $400,000,000 or an average annual expenditure of more than $20,000,000. Such sums can hardly be called excessive when viewed in the light of the results obtained or from the standpoint of the value of civil aviation to this country.

Therefore, there is little meaning to the question "Is the Federal Government going to spend money on civil aeronautics?" A more appropriate inquiry would be "At what rate is the Government going to continue to spend money on civil aeronautics?" It is my opinion that there is no present prospect that the Federal Government can hope to avoid maintaining and even increasing the present rate. So important has air transportation become to the national economy; so important are our airports; our airmen and our airplane factories to the national defense; and so great is the industrial promise of private flying, that no one would even venture to suggest that the Federal Government should discontinue its policy of supporting civil aeronautics.

Aviation Development Costly But Necessary

Aviation is a costly but necessary enterprise. Every nation has come to this realization and all the major nations of the world are appropriating vast sums for civil as well as military aviation.

Indications Are That Domestic Air Transportation May Soon Be Self-Supporting

The manufacturing branches of the aviation industry are now not only self-supporting but in numerous instances are making a substantial profit. There are indications that the domestic air transport operations may soon be largely self-supporting. Although the Civil Aeronautics Authority has granted increases in the rates of mail pay to a number of air lines, reliable statistics indicate that the cost of this rapidly-increasing service to the Post Office Department may soon be equaled by the constantly increasing income received by the Government from air mail postage. The international air transportation ledger is not yet in such a satisfactory financial balance, but the current volume of international air mail is almost double that of a year ago. Overseas operations are much more costly than the domestic overland operations, and up to this time the postage income received by the Government represents only 31.80% of the total mail payments for the international services rendered during the last eleven years.

Safety Is Watchword of Authority

The cost of maintaining the Federal airways and the cost to the Government of the certification, inspection, and regulation of aircraft, airmen, and air transportation companies necessarily will increase as these air activities expand. These functions of the Authority are essential to safety in aviation and safety must continue to be the watchword for the Authority and for all branches of the aviation industry.

Another item in the air transport picture which has implications of increased Federal expenditures is the demand for the extension of the present air line network. At present there are more than eighty applications for certificates for new routes on the docket of the Authority and many of these petitions are from new companies. The Authority is faced with very grave responsibilities in passing upon these applications. It must be careful not to authorize new routes which cannot be justified on the basis of the value of the services which they will perform. It must avoid placing upon the public treasury the heavy financial burdens incident to the permanent operation of air lines which have no prospect of ever becoming self-sustaining and which at best can expect but a nominal mail and passenger traffic. It must assure itself that the proposed new routes will fit into an economically integrated national air transportation system.

Mail Pay Substantial Portion Of Air Lines' Revenue

An important factor to be considered in connection with new air lines is that under existing law the Federal Government provides through mail pay a very substantial portion of the revenues of such lines. It would be unfortunate, indeed, if the Authority were to permit air lines to spring up like mushrooms all over the country with no greater justification than that those promoting them will establish for themselves a remunerative business which largely would be financed and supported in perpetuity by the Federal Government. Anyone who is familiar with the disastrous consequences which resulted from haphazard railroad promotions, thirty, forty, and fifty years ago, or with the more recent uneconomic planless development of power utilities in many areas of the country, will appreciate the gravity of this question.

In still another field of aviation the Federal Government has assumed financial obligations; namely, private flying. The entire time and attention of one of the divisions of the Authority is devoted to the interests of private flyers and much of the work of the inspection force of the Authority is given over to the examination and certification of private flyers and the inspection of the aircraft they fly.

27,000 Certif. Pilots—Predict 75,000

There are at present approximately 27,000 certificated civilian pilots and it is estimated that by the end of 1941, largely as a result of the stimulus provided by the Civilian Pilot Training Program, this number will be increased to more than 75,000.

I know you are all interested in the aeronautical activities I have just mentioned, but undoubtedly at this time you are more interested in the development of airports. Everyone must agree that such activities are of little value if we do not have adequate airports. Yet on the other hand without these other activities there would be little need for airports. Consequently, all phases of aeronautical development must move forward together.

Criticize Authority for Failure to Cause Appropriation of Millions

Some spokesmen for municipal and civil aviation organizations recently have been quite critical of the Authority because it did not in some way induce the last Congress to appropriate and make immediately available millions of dollars for airport construction. While the Civil Aeronautics Authority has no desire to shirk any of its responsibilities, it must be remembered that the Authority is an independent agency of Congress whose powers and functions are fixed by law. The Civil Aeronautics Act definitely imposes upon the Authority the duty of advising Congress upon aeronautical matters, at the same time prescribing the procedure by which that advice shall be given. It is not the proper role of the Authority to draft bills and lobby them through Congress, no matter how desirable such legislation might appear to the Authority or to any other person interested in aviation. The Authority legally cannot and morally should not constitute itself a high-pressure agency for influencing the members of Congress. However, it can and should advise the Congress in the manner prescribed and sanctioned by law as to what legislation in its opinion is necessary to the sound development of civil aviation. And it has done just that in the matter of airports.

Civil Aeronautics Act Authorizes Airport Survey

The Civil Aeronautics Act which created the Authority required it to make a national airport survey and recommend to the Congress (1) whether the Federal Government should participate in the construction, improvement, development, operation, or maintenance of a national system of airports, and (2) if Federal participation is recommended, the extent to which, and the manner in which the Federal Government shall so participate. The Authority made such a survey and in its report to Congress last February made such recommendations.

Authority Advises Congress to Participate in Airport Development—Estimate 1-Year Cost at $125,000,000

To be specific, the Authority advised Congress that in its opinion the Federal Government should participate in the construction of airports, particularly those airports which are vital to the Federal system of airways and to the national defense. The Authority's report said: "In passing upon applications for Federal expenditure on airport development or improvement, the highest preference should be given to airports which are important to the maintenance of safe and efficient operation of air transportation along the major trade routes of the Nation; and to those rendering special service to the national defense." The Authority pointed out in its report that during the year ahead a total sum of $125,000,000 could be efficiently used for these purposes.

At the time the Authority made its national airport survey and its report to Congress the Federal Government was appropriating large sums for relief and had for several years devoted a sizeable portion of these funds to airport construction. With the relief problem still acute and the apparent certainty that Congress would for some time continue to provide appropriations for relief, the Authority thought that it would be wise specifically to allocate a certain percentage of the relief funds for airport construction, and it recommended an allocation of $100,000,000 of the 1940 relief appropriation for airports. In addition it recommended that a supplemental appropriation of $25,000,000 be appropriated for those airport construction projects which could not be provided for from relief funds because of the limitation specified in the relief appropriation act on the ratio of expenditures for labor and for materials, thereby providing funds for those airport construction projects which call for a larger percentage of the allocated funds for material and a lesser proportion for labor.

The Authority made it quite clear in its report to Congress that when the relief appropriations were reduced to a point where it would no longer be practicable to construct airports with relief labor the Government should, through special appropriations, make provisions for such necessary construction. The Authority did not at the time it sent its recommendations to Congress and does not now hold to the opinion that the Federal Government should assume the full burden of airport construction. It feels that this burden should be reasonably shared by the municipal, county, and state governments.

Too Much Diversification For Unification

We do not believe that there can be any uniform and universally applicable rule covering the division of costs among the various units of government. Some airports exist primarily in the interest of the locality; others are of regional or of national importance. It is hardly possible to imagine an airport so placed that it would not be useful to somebody; but that does not mean that every conceivable location becomes a matter of national importance, and of proper Federal concern. There are an indefinite variety of cases, and it has seemed to the Authority indispensable that there be a corresponding flexibility of procedure, and that there should be some discretion as to the extent of Federal participation in order that it may be directly related to the circumstances of the particular case. We have so expressed ourselves in our airport report; but we may have erred in not making that part of our recommendations emphatic enough, since it seems to have been very commonly overlooked in the subsequent discussions of the Authority's proposals. A discretionary role is not an easy one to occupy, and a flexible rule is not an easy one to administer. It would be far simpler from the point of view of Federal Authority to have some such uniform rule as that the Federal Government will bear a fixed proportion of the total cost of every airport project that meets a certain minimum standard of acceptability; but we do not think that a uniform rule, despite its simplicity, would give the best results that can be obtained from a given amount of money.

Justly Proud Because We Have More Civil Air Development Than Any Other Nation—Limits of Air Space Our Only Barrier

We are justly proud of the advanced development of civil aviation in this country; that we have more privately-owned aircraft and civilian pilots than any other nation; that our air transport companies fly more miles and carry more passengers with an unequalled record of safety; that we have more and larger and better airports serving an aviation-minded public; and that our aircraft manufacturers produce the best and latest in civil aircraft. All of this has been made possible by the continued cooperation of the states, municipalities, the industry, and the Federal Government. There is no problem confronting us today which cannot be answered if we have the unified support of all who are interested in aviation. The Authority hopes for the continued cooperation and the sustained help of these same agencies and groups. With it, the limitlessness of the air space is our only barrier.

Stainback—

(Continued from Page 6)

He came out of the Eastman store with photographic stuff slung all over him but with one hand free to help me with the problem presented by two paper sacks stuffed with assorted souvenirs including a patent potato peeler for little Pink's mama; one cane (the weight man guessed 170 pounds), one cup of coffee, two hot dogs, and no place to park any of it. He was going down to Washington the next day, he said, to photograph the wild weather sequences we have been seeing these past several months, to map and try to restore its old geographic arrangement.

There were any number of interesting goings-on at the Fair that day, not the least of which was the crowding of New York folks to see those other (and aboriginal) cliff dwellers from New Mexico.

How About Air Mailing a Few Acres to Points West

According to Weekly Notices to Airmen, Vol. 7, No. 16, dated October 3, 1939, the intermediate landing fields at LeRoy and Dana, Wyoming, "shall be discontinued and dismantled." While you're dismantling, could you pack a few acres for shipment, preferably by air mail? We could use any quantity out here at Portland, Sacramento, and San Diego.

STUDENTS—

(Continued from Page 6)

specifically provided that at least five per cent of the students selected for training shall be selected from applicants other than college students. Aliens are not eligible for training.

While complete details are not yet available, it is understood that courses of instruction will require a full college year to complete. This is twice as long as was required in the experimental program just finished.

Experimental Program Successful

The experimental program which was made possible by the diversion of $100,000 from appropriations for the National Youth Administration was deemed highly successful. Three hundred and thirty students were trained in thirteen colleges. Classes of from twenty to fifty students were found to be about the right size for best results and it is predicted that several hundred colleges will participate in the regular program.

Benefits Extended to Noncollege Men

Plans thus far developed contemplate that those students who under the new Act must come from without the college's enrollment can be instructed on the vocational extension basis in the same manner as those who are enrolled in the college.

Record Holds! A Newsletter— An Announcement

By WM. T. SWAIN
Council No. 31, AA
Burbank, Calif.

Ah, the record still holds! A newsletter, an announcement! This month I wish to report the addition to the F. W. "French" Williams' family. During the month of October a fine baby daughter arrived in the Williams' household. Mrs. Williams doing nicely, thank you. But, friends, I'm afraid that is going to be the last announcement for the time being. Neither I, nor any of my "spies," can locate any possible announcements. But, even if I do say so myself, I do believe I have had a pretty good record.

Things All A-Twitter at AM4 Ports

Things have certainly been in a twitter in these AM4 ports of call lately. With all the checking out of the new crews and the starting of Trips No. 5 and No. 6 clear across the continent, we have been going and coming on all trips. Still some talk of breaking some of the runs at El Paso and Tucson but, as yet, the runs are continuing the same, with the breaking of the new run at El Paso. Also we have completed our move from Grand Central in Glendale to Union Air Terminal in Burbank. It is with great satisfaction that we pass over the old "landing field" and continue on into Union. The flights started operating out of Union on the 10th of October and on the 7th of November the entire personnel, including radio, meteorology, reservation, etc., finished moving into the new building.

Everything Serene Until Gas Gauge Needle Does Loop Around "Zero"

Something I would like to pass on—that trip our friend and fellow First Officer Hoyt had while laying over in El Paso. It seems a trip out to the "White Tanks" was decided upon to be made in a nice new car. Everything was very pleasant until our friend "Baldy" noticed that the gasoline gauge on the fine new automobile was reading very near the "Zero" mark—in fact, it was bouncing all around it. Now as everybody knows that has been near the road from El Paso to the Waco Tanks, it is only a road and very few people travel over it. But, to go ahead with my story, as the journey continued this young fellow finally became worried, really he should, for he had a trip to take out that night. Then it happened. This nice new auto really did run out of gasoline. There they were with only one thing to do and that was to start walking. Imagine his surprise when he learned the nearest place to walk for gasoline was the airport at El Paso. So, that is what the luckless fellows did. However, the story ends happily as the pilot made his trip. The moral, as usual, is: "Be sure to have enough gasoline, no matter what kind of a flight you are making."

No More Lawn Sleepers

I notice there are no more pilots sleeping on the lawn at Tucson lately. Guess it is because they are "reviving" and bringing new life to the grass.

A PANE IN THE BELLY

Pilots dependent on lights or throttle setting to give indication or warning of the position of their retractable undercarriages might take a hint from Bessie Owen. Miss Owen installed a window four inches square in the floor of the cabin and she has acquired the habit of seeing the position of the wheels before each landing. This idea has been used on experimental ships and it seems logical to extend it to ships in production.

—Western Flying.